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1993 South Dakota Corn Performance Trials

R. G. Hall

South Dakota State University, robert.hall@sdstate.edu

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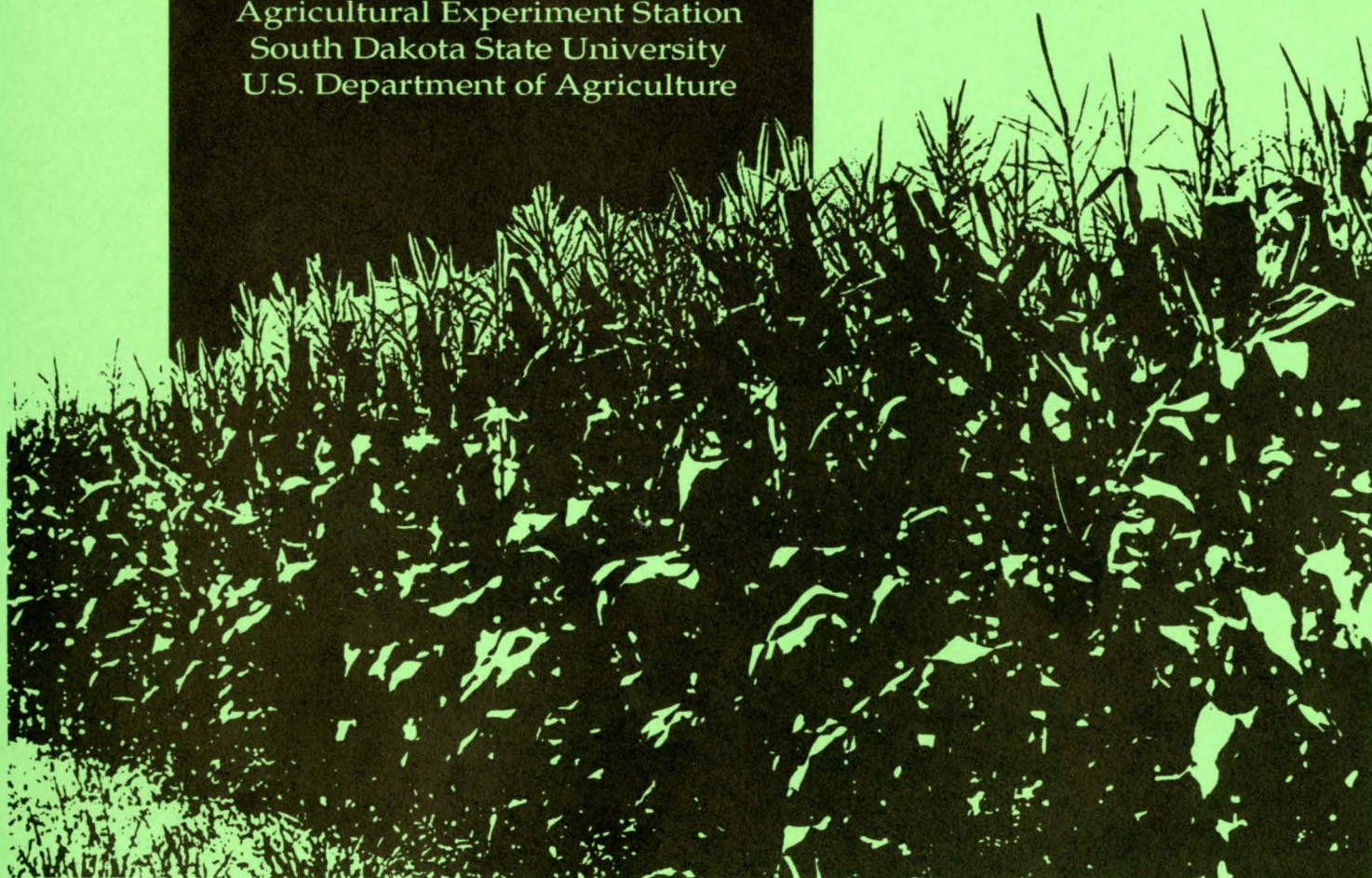
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South Dakota

CORN

PERFORMANCE TRIALS

Agricultural Experiment Station
South Dakota State University
U.S. Department of Agriculture



Contents

| | |
|---|----|
| Table 1. Test trial locations, seeding dates, and harvest dates | 4 |
| Table 2. Temperature and precipitation data | 4 |
| Table 3. Soil classification, fertilizer applied, land preparation, and previous crops | 4 |
| Table 4. Watertown, NE Research Farm, early maturity (95 days or less) | 5 |
| Table 5. Watertown, NE Research Farm, late maturity (96 days or more) | 6 |
| Table 6. No-till: Frankfort, Steve Masat farm, early maturity (100 days or less) | 7 |
| Table 7. No-till: Frankfort, Steve Masat farm, late maturity (101 days or more) | 8 |
| Table 8. Brookings, SDSU Agronomy Farm, early maturity (100 days or less) | 9 |
| Table 9. Brookings, SDSU Agronomy Farm, late maturity (101 days or more) | 10 |
| Table 10. Sioux Falls, Tom Wintersteen farm, early maturity (105 days or less) | 11 |
| Table 11. Sioux Falls, Tom Wintersteen farm, late maturity (106 days or more) | 12 |
| Table 12. Irrigated, no-till: Pierre, Dakota Lakes Research Farm, early maturity (100 days or less) | 13 |
| Table 13. Irrigated, no-till: Pierre, Dakota Lakes Research Farm, late maturity (101 days or more) | 14 |
| Table 14. Armour, Robert Clark farm, early maturity (110 days or less) | 15 |
| Table 15. Armour, Robert Clark farm, late maturity (111 days or more) | 16 |
| Table 16. Beresford, SE Research Farm, early maturity (110 days or less) | 17 |
| Table 17. Beresford, SE Research Farm, late maturity (111 days or more) | 19 |
| Entries in the 1993 South Dakota corn performance trials | 21 |

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1 9 9 3 South Dakota CORN PERFORMANCE TRIALS

Robert G. Hall

Associate Professor/Extension Agronomist
Manager, Crop Performance Testing

Plant Science Department
Agricultural Experiment Station
South Dakota State University
Brookings, SD 57007-1096

The relative performance of corn hybrids grown under similar environmental conditions in 1993 is evaluated in this report.

Information in the tables includes both 1993 and 1992-93 grain yields in bushels per acre (bu/acre); and 1993 test weight, moisture percentages of shelled corn at harvest, final plant populations per acre, and stalk lodging percentages. The test trials reported in this publication were conducted by the Plant Science Department Crop Performance Testing Program, Agricultural Experiment Station.

The assistance of the following individuals is appreciated: Dwayne Beck, Loyal Evjen, Delbert Robbins, and Bob Berg of the research farms; technicians Kevin Kirby and Darin Huber; and Robert Clark, Tom Wintersteen, and Steve Masat, farmer-cooperators.

Location of the 1993 Trials

Test trial locations and seeding and harvest dates are given in Table 1. Seeding started on May 3 and was completed by May 8.

Trial results at Armour, Sioux Falls, Spink County, and Pierre were relatively good this year because of timely planting, adequate moisture, and adequate temperatures.

Test trial results at other locations were below average because of excessive moisture and/or cool temperatures during the summer which caused depressed yields or test weights or high moisture levels at harvest.

Weather and Climatic Conditions

Climatic data (Table 2) for the 1993 corn growing season, April-

September, are based upon U.S. Monthly Climatological Data (NOAA) recorded at a weather station reasonably near each trial site. The Watertown, Pierre, and Sioux Falls airport data are used for the NE Research Farm, Dakota Lakes Research Farm, and Tom Wintersteen farm trials, respectively. Stations are located at or near the other trial sites.

Precipitation quantities may differ between the actual test site and the recording station; but temperatures are generally similar over a much wider area and are considered applicable to the trial area.

April and May temperatures (Table 2) were normal to 3 degrees below normal. However, temperatures dropped 4.4 degrees below normal in June and July, 1.2 degrees below normal in August, and about 5 degrees below normal in September.

Monthly precipitation totals at Armour, Centerville (SE Farm), Sioux Falls, and Brookings were high for May, June, and July. Monthly precipitation totals at Watertown, Redfield, and Pierre were highest in June and July.

Cool temperatures in June and July slowed growth to the extent that 50% of the state corn crop silked on about August 13, which is about 2 weeks later than the normal silk date of July 30. In August, temperatures increased somewhat, which helped to bring the crop along. However, higher temperatures in August could not compensate for the lower temperatures of June and July, and the corn crop continued to mature behind schedule. Consequently, with the lower temperatures in August, much of the crop did not reach full maturity. As a result, yields or test weights were low in the Beresford, Brookings, and Watertown areas.

Hybrid Entry Procedure

Participating companies designated the test locations where their entries were to be grown. Entries were placed into early or late trials based upon maturity information supplied by the company. The arbitrary breaks at each site were 95 days for Watertown; 100 days for Frankfort, Brookings, and Pierre; 105 days for Sioux Falls; and 110 days for Beresford and Armour. A fee was charged for every entry at each location. A listing of the participating firms and hybrids entered is given on the last pages of this circular.

Experimental Procedure

Entries included in each trial were seeded in three replications. Plots of individual hybrids were located at random within each replication. Each plot consisted of two 30-inch rows, 26 feet long. The target seeding population per acre for each location was:

| Location | Seeds per Acre |
|--------------------|----------------|
| Watertown | 22,100 |
| Frankfort | 20,800 |
| Brookings | 22,100 |
| Sioux Falls | 22,800 |
| Beresford | 24,100 |
| Armour | 20,100 |
| Pierre - irrigated | 33,500 |

Soil types, starter fertilizers, land preparation, and previous crop at each test trial site are outlined in Table 3. No insecticides were used for corn rootworm control this year. A recommended short-residue preemergence herbicide was banded over the row at seeding at most sites.

A 31-cell cone drill seeder was used for all plots. Cone units were mounted above commercial maxi-merge units. Seeding rate was 15% more than the desired number of plants harvested per plot. Seedbed preparation was good at

all locations. Final stands in all trials were near desired levels, except for Legend LS7393 in the early test at Pierre.

Measurements of Performance

Yield. Yields in all trials are averaged from three replications (except SE Farm) and expressed as bushels per acre at 15.5% moisture and a bushel weight of 56 lb.

Only two replications were harvested at the SE Farm. The third was flooded out. Both 1993 and 1992-93 yields were calculated using two replications.

Hybrids of equal potential may yield differently because of variations in slope, soil fertility, and stand. Statistical tests were conducted to determine whether these differences were caused by variations in environment or were true varietal differences.

The coefficient of variation (CV) for yield was greater than desired for the early test at the NE Farm at Watertown (Table 4). Ideally, the CV value, which is a measure of experimental error, should not exceed 16%. **If the CV value exceeds 16%, the data should not be used to make hybrid comparisons because of the high degree of experimental error measured in the test trial.**

Experimental error may be the result of several factors, including test methods; or of environmental factors, such as moisture, temperature, and soil variations; or of agronomic factors, like seeding date, reseeding, or seed quality factors. All of these factors may or may not be controllable in a given year. In 1993 the yield data in Table 4 should not be used to make hybrid comparisons due to the high level of experimental error.

The high CV value at Watertown was due to high winds on the night of July 31 which caused many tassels to snap off. Commonly called "green snap," this condition occurs when high winds break the tassel off at the node just below the tassel.

Although it would appear that green snap is hybrid dependent, it really is not. All hybrids appear to be very prone to having a weak node below the tassel shortly after the tasseling stage. Green snap occurs when high winds hit the corn crop shortly after tasseling. Researchers have observed this for years but as yet have no explanation for it. They believe this vulnerability only lasts for a few days and then disappears.

To convert data in these tables to the metric system use the factor 1.121 to convert lb/acre to kilograms/hectare. For example, a yield of 55 bu/acre from the yield tables would be converted to kilograms/hectare by:

$$55 \text{ bu/acre} \times 1.121 = 61.7 \text{ kilograms/hectare}$$

Moisture Content. This is expressed for each entry as the percentage of moisture in the shelled corn at the time of harvest. Moisture content is inversely related to maturity. Because maturity is a prime concern in South Dakota, moisture figures are of considerable importance in the evaluation of the trial entries. Hybrids that provide satisfactory yields and can be stored without additional drying are desirable.

Use of tables. First, check for the "least significant difference" (LSD) value at the bottom of each column of data averages. The LSD value indicates how much a variable such as yield must differ between two hybrids for there to be a real yield difference.

An LSD value is given at the bottom of every column where there is

significant difference among the averages within that column. If there is no real difference among the averages within a given column a “nonsignificant” (NS) difference is indicated.

The LSD value for a variable can be used in two ways. First, it compares whether two hybrids really differ in yield.

For example, the yield difference between any two hybrids in the late trial at Watertown (Table 5) must be more than 9 bu/acre. If it isn’t, there is no real yield difference between the two hybrids.

Second, the same LSD value can identify which hybrids are the best yielders at a given location.

Again in the late maturity test trial at Watertown, the highest yield was 72.6 bu/acre for Cargill 4327. To find out if Cargill 3427 is the only top yielder at Watertown we must use the LSD value of 9.0 bu/acre at the bottom of the 1993 yield column. For hybrids to

be in the best yield group they must yield within 9.0 bu/acre of Cargill 4327 (72.6 - 9.0) or they must yield more than 63.6 bu/acre. Therefore, any hybrid yielding 63.7 bu/acre or higher is in the top yielding group; or we can say 63.7 bu/acre is the minimum best value for top yielding late hybrids at Watertown in 1993.

In this case, the hybrids Cargill 4327 down through and including Ciba 4303 are in the best yield group because they all yielded more than 63.7 bu/acre. Likewise, the best minimum value for bushel weight is 44.7 lb.

Except for one entry in the early test at Pierre, all final stand populations were similar at a given test location. In the early test at Pierre there was a significant final stand effect. The test LSD (5%) for final stand was 1,571. The highest population at Pierre was 33,500. For any population to be significantly lower than 33,500, the lower population had to be (33,500 - 1,571) or 31,929 plants per acre or less.

In this case, it would be unfair to compare the yield of Legend LS7393 with the other hybrids because its final stand of 29,815 is not within one LSD (5%) value (1,571) of any of the other hybrids in this test.

For harvest moisture content and stalk lodging percentages, look for the maximum best value at the bottom of those table columns. The appropriate LSD values are added to the lowest numerical value within a column to obtain the maximum best values.

In the late test at Watertown (Table 5), the best harvest moisture percentages within the harvest moisture column are 21.9% or less. Likewise, the best stalk lodging percentages within the stalk lodge column are 3% or less.

In summary, the best hybrids in the late maturity test at Watertown (Table 5) would yield more than 63.7 bu/acre in 1993, have test weights of at least 44.7 lb/bu or higher, contain 21.9% moisture or less, and have 3% or less lodged stalks.

Table 1. Test trial locations, seeding dates, and harvest dates.

| LOCATION | COUNTY | POST OFFICE | DATE SEEDED | DATE HARVESTED |
|----------------------------------|-----------|-------------|-------------|----------------|
| N. E. RESEARCH FARM, 15N* | CODINGTON | WATERTOWN | MAY 11 | NOV. 9 |
| TOM WINTERSTEEN FARM, 1S, 1W, 3S | MINNEHAHA | CROOKS | MAY 4 | NOV. 8 |
| STEVE MASAT FARM, 6S, 2W | SPINK | FRANKFORT | MAY 12 | OCT. 28 |
| SDSU AGRONOMY FARM, 2NE | BROOKINGS | BROOKINGS | MAY 4 | NOV. 1 |
| S. E. RESEARCH FARM, 7W, 3S | UNION | BERESFORD | MAY 20 | NOV. 2 |
| ROBERT CLARK FARM, 4W, 1S | DOUGLAS | ARMOUR | MAY 5 | NOV. 3 |
| DAKOTA LAKES RESEARCH FARM, 17E | HUGHES | PIERRE | MAY 3 | NOV. 4 |

* MILEAGE AND DIRECTIONS FROM NEAREST POST OFFICE.

Table 2. Temperature and precipitation data, 1993 South Dakota corn performance trials.

| LOCATION | TYPE OF DATA | APRIL | MAY | JUNE | JULY | AUG. | SEPT. | TOTAL |
|--------------------------------------|----------------|-------|------|------|------|------|-------|-------|
| WATERTOWN (N. E. FARM) AIRPORT | PRECIPITATION* | 2.01 | 2.33 | 5.53 | 5.01 | 2.42 | 3.36 | 20.66 |
| | AVER. TEMP.** | 40.5 | 54.5 | 60.8 | 67.4 | 68.0 | 53.9 | |
| | TEMP. DIFF. | -0.7 | -2.6 | -6.0 | -5.1 | -2.3 | -5.7 | |
| SIOUX FALLS AIRPORT | PRECIPITATION | 2.61 | 8.26 | 6.43 | 7.86 | 3.10 | 1.88 | 30.14 |
| | AVER. TEMP. | 44.1 | 57.1 | 65.1 | 71.4 | 71.4 | 56.8 | |
| | TEMP. DIFF. | -2.8 | -1.3 | -3.2 | -2.9 | 0.0 | -4.1 | |
| REDFIELD (SPINK CO.) 2 NE | PRECIPITATION | 2.95 | 2.26 | 5.81 | 9.20 | 1.91 | 1.23 | 23.36 |
| | AVER. TEMP. | 43.0 | 56.1 | 62.0 | 67.4 | 68.8 | 54.3 | |
| | TEMP. DIFF. | -2.0 | -0.9 | -4.9 | -5.9 | -1.9 | -5.6 | |
| BROOKINGS 2 NE | PRECIPITATION | 1.96 | 4.32 | 8.69 | 5.18 | 2.27 | 2.12 | 24.54 |
| | AVER. TEMP. | 39.9 | 54.4 | 61.6 | 67.8 | 68.0 | 52.9 | |
| | TEMP. DIFF. | -0.1 | -1.5 | -4.0 | -2.9 | 0.0 | -5.3 | |
| CENTERVILLE (S. E. FARM) 6 SE | PRECIPITATION | 2.51 | 5.38 | 5.67 | 7.12 | 4.40 | 1.76 | 26.84 |
| | AVER. TEMP. | 44.1 | 56.9 | 65.3 | 70.5 | 70.3 | 55.7 | |
| | TEMP. DIFF. | -3.4 | -2.4 | -3.7 | -3.3 | -0.5 | -5.4 | |
| ARMOUR (DOUGLAS CO.) | PRECIPITATION | 2.70 | 5.87 | 3.70 | 6.65 | 3.46 | 1.13 | 23.51 |
| | AVER. TEMP. | 46.9 | 59.7 | 66.4 | 71.5 | 72.0 | 59.2 | |
| | TEMP. DIFF. | -2.1 | -0.3 | -3.6 | -4.4 | -1.5 | -4.0 | |
| PIERRE (DLR FARM) AIRPORT | PRECIPITATION | 2.33 | 1.79 | 3.07 | 3.80 | 0.52 | 1.66 | 13.17 |
| | AVER. TEMP. | 44.8 | 58.3 | 63.5 | 70.0 | 71.3 | 57.9 | |
| | TEMP. DIFF. | -2.3 | 0.0 | -5.2 | -6.0 | -2.6 | -4.5 | |

*PRECIPITATION = INCHES, TEMPERATURE = DEGREES FAHRENHIEIT.

Table 3. Soil classification, fertilizer applied, land preparation, and previous crops.

| LOCATION | SOIL TYPE | STARTER FERTILIZER 2 X 2 APPLICATION (LBS PER ACRE) | LAND PREPARATION, PREVIOUS CROP |
|-------------|-------------------------|---|------------------------------------|
| BROOKINGS | VIENNA LOAM | 37 - 18 - 00 | CONV., SPRING WHEAT |
| WATERTOWN | BROOKINGS SIL. CL. LOAM | 37 - 18 - 00 | CONV., FLAX |
| FRANKFORT | BEOTIA SILT LOAM | 37 - 18 - 00 | NO-TILL, MILLET STUBBLE |
| BERESFORD | TRENT SILTY LOAM | 37 - 18 - 00 | CONV., SOYBEAN |
| ARMOUR | EAKIN-ETHAN COMPLEX | 37 - 18 - 00 | NO-TILL, WHEAT STUBBLE |
| PIERRE | CANNING LOAM | 37 - 18 - 00 | NO-TILL, SOYBEAN STUBBLE |
| SIOUX FALLS | MOODY-NORA SILTY LOAM | 37 - 18 - 00 | CONV., SOYBEAN |

SIL.= SILT, CL.= CLAY, CONV. = CONVENTIONAL.

**Table 4. 1993 corn hybrid performance trial results:
Watertown, SD, NE Research Farm, early maturity (95 days or less).**

| ----- BRAND & HYBRID ----- | YIELDS AT 15.5% MOIST. | | 1993 HARVEST MOIST. (%) | BUSHEL WEIGHT (LB) | FINAL POP. PER ACRE | STALK LODGE (%) |
|----------------------------|---------------------------|------|----------------------------------|--------------------------|------------------------------|-----------------------|
| | 1993 (BU/AC) | 2-YR | | | | |
| DEKALB DK 462 | 55.0 | 63.4 | 31.6 | 36.2 | 22110 | 2 |
| PIONEER 3861 | 54.6 | 61.8 | 25.7 | 37.7 | 22110 | 0 |
| KALTENBERG K4400 | 52.1 | . | 23.0 | 39.8 | 22110 | 0 |
| TOP FARM SX1193 | 50.0 | . | 25.4 | 40.8 | 22110 | 0 |
| TOP FARM SX2195 | 49.7 | . | 24.6 | 38.3 | 22110 | 0 |
| DYNA-GRO 15095 | 49.6 | . | 26.8 | 37.9 | 21998 | 0 |
| ASGROW RX433 | 48.9 | . | 28.8 | 40.9 | 21440 | 1 |
| DAIRYLAND ST-1195 | 48.8 | . | 25.7 | 38.8 | 22110 | 1 |
| CUSTOM FARM CFS W2457 | 47.2 | . | 28.2 | 40.3 | 22110 | 1 |
| G. HARVEST H-2292 | 46.8 | . | 23.6 | 40.2 | 22110 | 1 |
| DEKALB DK 381 | 45.9 | 53.5 | 21.4 | 40.0 | 21887 | 2 |
| N. KING N-2409 | 44.5 | . | 22.7 | 45.5 | 22110 | 0 |
| CARGILL 2927 | 43.1 | 49.0 | 31.3 | 35.2 | 22110 | 1 |
| G. HARVEST H-2295 | 41.4 | . | 27.2 | 40.6 | 22110 | 1 |
| KALTENBERG K3909 | 40.5 | . | 25.6 | 39.9 | 21998 | 1 |
| STINE 930 | 39.8 | . | 22.9 | 42.9 | 22110 | 3 |
| CARGILL 3427 | 39.0 | 56.4 | 29.0 | 36.3 | 22110 | 0 |
| CIBA 4183 | 38.3 | . | 25.4 | 36.7 | 22110 | 0 |
| CENEX/LOL 375 | 37.9 | . | 28.9 | 36.8 | 22110 | 0 |
| SIGCO 1489 | 37.5 | . | 22.2 | 41.8 | 21440 | 0 |
| DEKALB DK 401 | 36.5 | 53.9 | 22.7 | 40.6 | 21998 | 3 |
| G. VALLEY GVS282 | 36.4 | . | 23.9 | 41.4 | 22110 | 1 |
| CIBA 4172 | 35.4 | 45.8 | 28.3 | 33.9 | 22110 | 0 |
| PAYCO 413 | 34.8 | . | 27.6 | 35.5 | 22110 | 0 |
| KALTENBERG K4800 | 31.9 | . | 31.2 | 36.2 | 21998 | 2 |
| SEXAUER SX450 | 31.2 | 48.8 | 30.9 | 34.7 | 22110 | 1 |
| AGRIGENE AG3500 | 29.2 | 47.5 | 30.3 | 34.7 | 22110 | 0 |
| DAHLGREN D5962 | 25.1 | 46.0 | 29.3 | 35.8 | 22110 | 0 |
| N. KING N-2933 | 24.4 | . | 26.1 | 38.1 | 21998 | 1 |
| SEXAUER SX420 | 23.5 | . | 25.8 | 39.9 | 21998 | 1 |
| DAIRYLAND ST-1294 | 22.7 | . | 28.2 | 34.2 | 22110 | 0 |
| PIONEER 3907 | 22.0 | . | 24.2 | 39.8 | 22110 | 0 |
| PAYCO 402 | 20.5 | 37.7 | 29.9 | 32.8 | 22110 | 0 |
| ASGROW RX350 | 18.6 | . | 23.3 | 41.2 | 21887 | 2 |
| TOP FARM SX2190 | 16.6 | . | 25.9 | 35.8 | 21328 | 1 |
| KALTENBERG K4500 | 15.1 | . | 21.9 | 34.7 | 21775 | 0 |
| ICI 8883 | 7.9 | 29.4 | 25.9 | 29.1 | 22110 | 0 |
| TEST AVERAGE: | 36.3 | 49.4 | 26.4 | 38.0 | 22013 | 1 |
| TEST LSD (5%) VALUE: | . | NS* | 2.3 | 4.2 | NS | NS |
| MINIMUM BEST VALUE: | . | . | . | 41.4 | . | . |
| MAXIMUM BEST VALUE: | . | . | 23.6 | . | . | . |
| TEST C.V.#: | 17.9## | 13.5 | . | . | . | . |

*NS - INDICATES HYBRID DIFFERENCES WITHIN A COLUMN ARE NOT SIGNIFICANT.
#COEF. OF VARIATION - A MEASURE OF EXPERIMENTAL ERROR; IF VALUE EXCEEDS

16.0% DATA SHOULD NOT BE USED TO MAKE HYBRID COMPARISONS.
##DUE TO THE HIGH C.V. THE YIELDS IN THIS COLUMN SHOULD NOT BE USED TO MAKE
HYBRID COMPARISONS. THE HIGH C.V. WAS PARTLY DUE TO "GREEN SNAP" OF THE
TASSELS WHICH OCCURRED ON JULY 31 AS A RESULT OF HIGH WINDS. GREEN SNAP
PERCENTAGES RANGED FROM 0 TO 95%.

**Table 5. 1993 corn hybrid performance trial results:
Watertown, SD, NE Research Farm, late maturity (96 days or more).**

| ----- BRAND & HYBRID ----- | YIELDS AT 15.5% MOIST. | | 1993 HARVEST MOIST. (%) | BUSHEL WEIGHT (LB) | FINAL POP. PER ACRE | STALK LODGE (%) |
|----------------------------|---------------------------|------|----------------------------------|--------------------------|------------------------------|-----------------------|
| | 1993 (BU/AC) | 2-YR | | | | |
| CARGILL 4327 | 72.6 | 67.4 | 19.6 | 40.4 | 22110 | 1 |
| SIGCO 1301 | 66.8 | 63.5 | 31.1 | 39.9 | 22110 | 5 |
| DEKALB DK 471 | 66.2 | . | 31.6 | 37.5 | 22110 | 0 |
| G. HARVEST H-2404 | 65.9 | 65.3 | 31.3 | 41.5 | 21998 | 7 |
| G. HARVEST H-2390 | 64.4 | 62.1 | 31.8 | 36.9 | 22110 | 1 |
| CIBA 4303 | 63.8 | . | 29.8 | 42.8 | 22110 | 4 |
| SIGCO 1497 | 59.7 | . | 26.5 | 46.4 | 22110 | 4 |
| JACQUES 5270 | 58.8 | 64.1 | 30.7 | 39.1 | 21887 | 3 |
| CARGILL 4277 | 57.0 | . | 24.1 | 37.2 | 22110 | 0 |
| SIGCO 1200 | 55.0 | 59.6 | 30.9 | 38.7 | 22110 | 2 |
| DEKALB DK 512 | 54.5 | . | 32.4 | 37.9 | 21887 | 0 |
| CUSTOM FARM CFS W3851 | 53.4 | . | 32.5 | 37.2 | 22110 | 1 |
| DAHLGREN D5002 | 53.1 | 58.3 | 29.1 | 39.6 | 22110 | 0 |
| DEKALB DK 485 | 52.9 | 63.8 | 32.2 | 36.9 | 22110 | 0 |
| STINE 1122X | 50.9 | . | 30.0 | 39.1 | 21998 | 2 |
| PAYCO 531 | 50.7 | 56.3 | 29.8 | 36.5 | 22110 | 0 |
| AGRIGENE AG3965 | 50.4 | . | 29.2 | 35.2 | 22110 | 0 |
| TOP FARM SX1097A | 48.2 | 56.7 | 30.5 | 38.9 | 22110 | 1 |
| KAYSTAR KX-610 | 47.5 | 58.5 | 30.1 | 38.5 | 21998 | 0 |
| CUSTOM FARM CFS 4227 | 47.3 | . | 31.7 | 38.0 | 22110 | 1 |
| MYCOGEN 5440 | 47.3 | . | 19.7 | 38.9 | 22110 | 1 |
| PAYCO 4421 | 47.3 | . | 31.2 | 38.1 | 22110 | 2 |
| KAYSTAR KX-615 | 47.2 | . | 31.5 | 39.3 | 22110 | 1 |
| KALTENBERG K4805 | 46.3 | . | 30.2 | 37.0 | 22110 | 0 |
| PIONEER 3769 | 43.9 | . | 30.1 | 39.3 | 22110 | 1 |
| PIONEER 3739 | 42.9 | . | 30.6 | 36.8 | 22110 | 0 |
| AGRIGENE AG3920 | 41.2 | . | 30.7 | 40.3 | 22110 | 1 |
| N. KING N-4242 | 40.9 | . | 31.3 | 38.3 | 22110 | 1 |
| CIBA 4273 | 39.1 | . | 32.2 | 39.1 | 22110 | 0 |
| CENEX/LOL 424 | 38.1 | . | 30.2 | 38.0 | 22110 | 1 |
| G. VALLEY GVS298 | 37.9 | . | 30.3 | 40.7 | 22110 | 2 |
| ICI 8777 | 37.4 | . | 32.4 | 37.4 | 22110 | 0 |
| STINE 992 | 36.6 | 57.1 | 31.6 | 38.4 | 22110 | 0 |
| KRUGER K9500 | 36.1 | . | 29.9 | 38.8 | 22110 | 1 |
| SEXAUER SX430 | 30.4 | . | 25.4 | 40.2 | 22110 | 0 |
| TOP FARM SX2102 | 22.1 | . | 30.5 | 41.2 | 22110 | 0 |
| CARGILL 3777 | 15.3 | . | 30.9 | 40.6 | 22110 | 0 |
| TEST AVERAGE: | 48.4 | 61.1 | 29.8 | 38.9 | 22089 | 1 |
| TEST LSD (5%) VALUE: | 9.0 | NS* | 2.4 | 1.8 | NS | 3 |
| MINIMUM BEST VALUE: | 63.7 | | | 44.7 | | |
| MAXIMUM BEST VALUE: | | | 21.9 | | | 3 |
| TEST C.V.#: | 11.4 | 10.2 | | | | |

*NS - INDICATES HYBRID DIFFERENCES WITHIN A COLUMN ARE NOT SIGNIFICANT.
#COEF. OF VARIATION - A MEASURE OF EXPERIMENTAL ERROR; IF VALUE EXCEEDS
16.0% DATA SHOULD NOT BE USED TO MAKE HYBRID COMPARISONS.

**Table 6. 1993 corn hybrid performance trial results (no-till):
Frankfort, SD, Steve Masat farm, early maturity (100 days or less).**

| ----- BRAND & HYBRID ----- | YIELDS AT 15.5% MOIST. | | 1993 HARVEST MOIST. (%) | BUSHEL WEIGHT (LB) | FINAL POP. PER ACRE | STALK LODGE (%) |
|----------------------------|---------------------------|-------|----------------------------------|--------------------------|------------------------------|-----------------------|
| | 1993 (BU/AC) | 2-YR | | | | |
| PIONEER 3733 | 151.1 | 120.3 | 22.3 | 53.0 | 20100 | 2 |
| DEKALB DK 471 | 150.5 | . | 20.7 | 48.2 | 20100 | 3 |
| N. KING N-4242 | 142.8 | . | 21.7 | 50.2 | 20100 | 0 |
| SIGCO 1200 | 141.9 | 117.5 | 22.7 | 50.4 | 20100 | 8 |
| DEKALB DK 462 | 141.6 | 122.9 | 21.8 | 47.4 | 20100 | 0 |
| PIONEER 3769 | 141.3 | . | 25.1 | 49.5 | 20100 | 1 |
| PAYCO 4421 | 141.2 | . | 20.8 | 50.1 | 20100 | 1 |
| SIGCO 1497 | 141.2 | . | 20.5 | 52.9 | 20100 | 3 |
| LEGEND LS7196 | 141.2 | . | 22.4 | 47.6 | 20100 | 2 |
| G. HARVEST H-2295 | 139.6 | . | 21.3 | 52.8 | 20100 | 2 |
| PAYCO 531 | 138.1 | 117.3 | 21.5 | 49.6 | 20100 | 1 |
| ASGROW RX433 | 137.7 | . | 20.3 | 51.8 | 20100 | 5 |
| G. HARVEST H-2322 | 135.6 | 113.9 | 20.9 | 47.8 | 20100 | 2 |
| CIBA 4273 | 135.1 | . | 22.0 | 51.2 | 20100 | 1 |
| ICI 8777 | 134.1 | . | 22.9 | 45.9 | 20100 | 1 |
| G. HARVEST H-2292 | 133.1 | . | 19.8 | 51.2 | 20100 | 0 |
| SEXAUER SX450 | 132.6 | . | 22.1 | 46.6 | 20100 | 0 |
| DYNA-GRO 5100 | 132.3 | . | 21.2 | 51.2 | 20100 | 7 |
| CIBA 4183 | 132.0 | . | 20.4 | 49.0 | 20100 | 0 |
| DEKALB DK 485 | 131.4 | 115.6 | 22.2 | 46.3 | 20100 | 1 |
| CARGILL 3477 | 130.6 | 112.7 | 21.1 | 53.1 | 20100 | 0 |
| SIGCO 1301 | 129.9 | 113.1 | 21.3 | 51.4 | 20100 | 6 |
| CARGILL 3427 | 129.2 | 110.2 | 22.5 | 48.1 | 20100 | 0 |
| LEGEND LS8301 | 128.5 | 108.7 | 21.0 | 50.6 | 20100 | 0 |
| TOP FARM SX2195 | 127.9 | . | 19.5 | 51.1 | 20100 | 2 |
| DAIRYLAND ST-1198 | 127.8 | 108.4 | 22.3 | 48.4 | 20100 | 1 |
| CARGILL 3777 | 127.3 | . | 21.6 | 52.2 | 20100 | 1 |
| KALTENBERG K4805 | 127.1 | . | 21.1 | 48.9 | 20100 | 0 |
| LEGEND LS7398 | 126.5 | . | 21.7 | 51.1 | 20100 | 1 |
| KAYSTAR KX-610 | 123.8 | 107.8 | 20.7 | 50.1 | 20100 | 0 |
| HORIZON 5055 | 123.5 | . | 20.9 | 49.4 | 20100 | 0 |
| AGRIGENE AG3920 | 122.9 | . | 19.9 | 54.3 | 20100 | 1 |
| KAYSTAR KX-615 | 122.7 | . | 21.1 | 50.4 | 20100 | 1 |
| DAIRYLAND ST-1202 | 122.3 | . | 20.7 | 49.4 | 20100 | 2 |
| HORIZON 4545 | 120.1 | . | 18.7 | 56.5 | 20100 | 1 |
| DAHLGREN D5002 | 118.5 | . | 20.8 | 50.4 | 20100 | 1 |
| TOP FARM SX1097A | 117.5 | . | 20.4 | 52.8 | 20100 | 0 |
| TOP FARM SX2102 | 114.2 | . | 20.6 | 50.0 | 20100 | 1 |
| TEST AVERAGE: | 132.0 | 114.0 | 21.3 | 50.3 | 20100 | 1 |
| TEST LSD (5%) VALUE: | 9.5 | NS* | 1.0 | 1.9 | NS | 3 |
| MINIMUM BEST VALUE: | 141.6 | | | 54.7 | | |
| MAXIMUM BEST VALUE: | | | 19.6 | | | 3 |
| TEST C.V. #: | 4.4 | 6.1 | | | | |

*NS - INDICATES HYBRID DIFFERENCES WITHIN A COLUMN ARE NOT SIGNIFICANT.
#COEF. OF VARIATION - A MEASURE OF EXPERIMENTAL ERROR; IF VALUE EXCEEDS
16.0% DATA SHOULD NOT BE USED TO MAKE HYBRID COMPARISONS.

**Table 7. 1993 corn hybrid performance trial results (no-till):
Frankfort, SD, Steve Masat farm, late maturity (101 days or more).**

| ----- BRAND & HYBRID ----- | YIELDS AT 15.5% MOIST. | | 1993 HARVEST MOIST. (%) | BUSHEL WEIGHT (LB) | FINAL POP. PER ACRE | STALK LODGE (%) |
|----------------------------|---------------------------|-------|----------------------------------|--------------------------|------------------------------|-----------------------|
| | 1993 (BU/AC) | 2-YR | | | | |
| DAHLGREN D5073 | 141.5 | . | 23.9 | 46.8 | 20100 | 1 |
| DYNA-GRO 5102 | 138.3 | . | 23.3 | 47.7 | 20100 | 15 |
| G. HARVEST H-2390 | 138.0 | 111.0 | 25.5 | 47.7 | 20100 | 0 |
| KAYSTAR KX-667 | 136.7 | . | 23.7 | 46.8 | 20100 | 2 |
| LEGEND LS8406 | 136.0 | . | 24.1 | 45.9 | 20100 | 3 |
| SIGCO 1307 | 135.6 | . | 24.9 | 47.5 | 20100 | 7 |
| DEKALB DK 493 | 135.1 | . | 22.6 | 46.9 | 20100 | 3 |
| PAYCO 633 | 134.9 | . | 21.7 | 48.5 | 20100 | 1 |
| TOP FARM SX1104A | 134.3 | 109.2 | 24.4 | 48.0 | 20100 | 4 |
| G. HARVEST H-2404 | 132.5 | 109.5 | 24.8 | 49.3 | 20100 | 2 |
| PIONEER 3514 | 132.0 | . | 26.5 | 47.6 | 20100 | 0 |
| CARGILL 4327 | 131.7 | 112.1 | 26.7 | 46.1 | 20100 | 2 |
| PIONEER 3655 | 130.8 | . | 24.0 | 50.6 | 20100 | 2 |
| KALTENBERG K5200 | 130.8 | . | 23.8 | 48.9 | 20100 | 6 |
| AGRIGENE AG5480 | 130.4 | . | 23.4 | 49.5 | 20100 | 2 |
| DEKALB DK 512 | 130.3 | 114.2 | 24.7 | 45.3 | 20100 | 2 |
| PAYCO 711 | 127.9 | 107.4 | 27.2 | 46.5 | 20100 | 4 |
| SEXAUER SX540 | 127.5 | . | 22.2 | 48.4 | 20100 | 0 |
| KALTENBERG K5600 | 127.5 | . | 25.0 | 48.1 | 20100 | 5 |
| PIONEER 3547 | 126.8 | . | 25.1 | 49.8 | 20100 | 1 |
| DYNA-GRO 5313IPRO | 126.0 | . | 24.6 | 49.5 | 20100 | 4 |
| ICI 8692 | 125.4 | . | 21.8 | 49.8 | 20100 | 2 |
| LEGEND LS9112 | 123.8 | . | 27.2 | 46.5 | 20100 | 2 |
| LEGEND LS8409 | 123.2 | . | 27.2 | 43.8 | 20100 | 0 |
| CIBA 4394 | 120.2 | . | 25.4 | 47.8 | 20100 | 2 |
| N. KING N-5220 | 120.0 | . | 24.4 | 47.7 | 20100 | 1 |
| KALTENBERG K5305 | 117.4 | . | 20.9 | 49.4 | 20100 | 2 |
| CIBA 4372 | 117.1 | 97.3 | 25.1 | 46.5 | 20100 | 0 |
| KAYSTAR KX-655 | 116.7 | . | 25.0 | 47.1 | 20100 | 1 |
| CARGILL 6677 | 111.3 | . | 28.1 | 43.6 | 20100 | 3 |
| TEST AVERAGE: | 128.7 | 108.7 | 24.6 | 47.6 | 20100 | 3 |
| TEST LSD (5%) VALUE: | 10.6 | NS* | 1.1 | 2.2 | NS | 4 |
| MINIMUM BEST VALUE: | 131.0 | | | 48.5 | | |
| MAXIMUM BEST VALUE: | | | 21.9 | | | 4 |
| TEST C.V.#: | 5.0 | 4.9 | | | | |

*NS - INDICATES HYBRID DIFFERENCES WITHIN A COLUMN ARE NOT SIGNIFICANT.
#COEF. OF VARIATION - A MEASURE OF EXPERIMENTAL ERROR; IF VALUE EXCEEDS
16.0% DATA SHOULD NOT BE USED TO MAKE HYBRID COMPARISONS.

**Table 8. 1993 corn hybrid performance trial results:
Brookings, SD, SDSU Agronomy Farm, early maturity (100 days or less).**

| ----- BRAND & HYBRID ----- | YIELDS AT 15.5% MOIST. | | 1993 HARVEST MOIST. (%) | BUSHEL WEIGHT (LB) | FINAL POP. PER ACRE | STALK LODGE (%) |
|----------------------------|---------------------------|------|----------------------------------|--------------------------|------------------------------|-----------------------|
| | 1993 (BU/AC) | 2-YR | | | | |
| PIONEER 3769 | 89.3 | . | 20.2 | 51.3 | 22110 | 1 |
| DEKALB DK 462 | 88.7 | 98.4 | 19.7 | 49.4 | 22110 | 1 |
| N. KING N-4242 | 86.6 | . | 16.8 | 53.9 | 22110 | 1 |
| SANDS SOI9991 | 85.2 | 88.6 | 18.0 | 50.5 | 22110 | 2 |
| SANDS SOI9031 | 85.2 | . | 20.0 | 51.6 | 22110 | 1 |
| SIGCO 1497 | 84.3 | . | 18.8 | 54.6 | 21998 | 1 |
| N. KING N-3808 | 83.8 | 82.1 | 17.4 | 52.4 | 22110 | 2 |
| CROW'S 375 | 83.7 | . | 22.0 | 51.3 | 22110 | 3 |
| PIONEER 3739 | 82.9 | . | 17.7 | 52.5 | 22110 | 1 |
| PAYCO 531 | 81.7 | 89.4 | 17.8 | 51.2 | 21887 | 0 |
| DAIRYLAND ST-1202 | 80.8 | . | 19.8 | 50.2 | 22110 | 0 |
| SIGCO 1301 | 79.5 | 82.3 | 20.4 | 51.0 | 22110 | 1 |
| SIGCO 1200 | 79.5 | 88.5 | 19.7 | 51.5 | 22110 | 2 |
| CARGILL 3477 | 79.4 | . | 21.6 | 50.1 | 22110 | 2 |
| DYNA-GRO 5100 | 78.7 | . | 20.1 | 51.8 | 21998 | 2 |
| DEKALB DK 401 | 78.3 | . | 17.1 | 54.4 | 22110 | 1 |
| CIBA 4172 | 78.2 | . | 16.8 | 51.8 | 22110 | 2 |
| STINE 1122X | 78.1 | . | 17.8 | 50.2 | 21998 | 1 |
| DEKALB DK 471 | 77.8 | . | 17.3 | 51.0 | 22110 | 1 |
| EPLEY EX 1201 | 77.7 | . | 18.2 | 52.9 | 22110 | 0 |
| DAIRYLAND ST-1198 | 77.5 | 84.3 | 18.2 | 50.8 | 22110 | 0 |
| TOP FARM SX1193 | 77.4 | . | 17.9 | 53.3 | 22110 | 1 |
| G. HARVEST H-2295 | 77.2 | . | 19.5 | 53.6 | 21998 | 2 |
| G. VALLEY GVS282 | 77.1 | . | 17.4 | 54.6 | 22110 | 2 |
| CENEX/LOL 424 | 76.4 | . | 19.1 | 48.8 | 22110 | 0 |
| TOP FARM SX2195 | 76.4 | . | 17.5 | 50.7 | 20770 | 1 |
| G. VALLEY GVS298 | 76.3 | . | 19.4 | 55.7 | 21998 | 2 |
| TOP FARM SX1097A | 75.8 | . | 19.4 | 49.7 | 21887 | 1 |
| JACQUES 5170 | 75.7 | . | 19.1 | 54.6 | 22110 | 1 |
| ASGROW RX497 | 75.5 | 78.6 | 20.8 | 48.3 | 22110 | 0 |
| ICI 8777 | 75.4 | 82.0 | 19.0 | 48.5 | 22110 | 2 |
| CIBA 4273 | 75.4 | . | 20.2 | 53.8 | 22110 | 0 |
| DAHLGREN D5962 | 75.4 | . | 18.8 | 49.9 | 22110 | 1 |
| SEXAUER SX510 | 75.3 | . | 17.9 | 50.1 | 22110 | 2 |
| AGRIGENE AG3920 | 75.3 | 86.1 | 18.7 | 53.7 | 21998 | 1 |
| CUSTOM FARM CFS 3818 | 75.1 | . | 19.0 | 51.6 | 22110 | 1 |
| STINE 992 | 74.9 | . | 18.7 | 49.5 | 21998 | 1 |
| CUSTOM FARM CFS W3851 | 74.6 | . | 18.4 | 49.9 | 22110 | 1 |
| G. HARVEST H-2322 | 74.6 | 84.2 | 18.4 | 48.0 | 22110 | 2 |
| AGRIPRO 194 | 74.4 | . | 18.9 | 49.0 | 22110 | 2 |
| AGRIGENE AG3965 | 72.0 | . | 16.3 | 48.5 | 21552 | 0 |
| PAYCO 4421 | 70.7 | . | 17.9 | 51.4 | 22110 | 3 |
| TERRA TR1020 | 69.2 | . | 20.7 | 51.4 | 21998 | 1 |
| AGRIPRO 328 | 66.4 | . | 19.7 | 48.4 | 22110 | 1 |
| TOP FARM SX2102 | 65.0 | . | 17.9 | 50.8 | 21998 | 0 |
| TERRA TR910 | 60.1 | 77.8 | 18.5 | 51.7 | 21887 | 1 |
| TEST AVERAGE: | 77.4 | 85.2 | 18.8 | 51.3 | 22032 | 1 |
| TEST LSD (5%) VALUE: | 11.2 | NS* | 1.0 | 2.4 | NS | 2 |
| MINIMUM BEST VALUE: | 78.2 | | | 53.3 | | |
| MAXIMUM BEST VALUE: | | | 17.2 | | | 2 |
| TEST C.V.#: | 8.9 | 10.0 | | | | |

*NS - INDICATES HYBRID DIFFERENCES WITHIN A COLUMN ARE NOT SIGNIFICANT.
#COEF. OF VARIATION - A MEASURE OF EXPERIMENTAL ERROR; IF VALUE EXCEEDS
16.0% DATA SHOULD NOT BE USED TO MAKE HYBRID COMPARISONS.

**Table 9. 1993 corn hybrid performance trial results:
Brookings, SD, SDSU Agronomy Farm, late maturity (101 days or more).**

| ----- BRAND & HYBRID ----- | YIELDS AT 15.5% MOIST. | | 1993 HARVEST MOIST. (%) | BUSHEL WEIGHT (LB) | FINAL POP. PER ACRE | STALK LODGE (%) |
|----------------------------|---------------------------|------|----------------------------------|--------------------------|------------------------------|-----------------------|
| | 1993 (BU/AC) | 2-YR | | | | |
| G. HARVEST H-2404 | 83.3 | 93.1 | 21.8 | 57.4 | 22110 | 1 |
| DEKALB DK 512 | 81.8 | . | 21.0 | 51.8 | 22110 | 0 |
| DEKALB DK 493 | 81.6 | . | 19.5 | 53.8 | 22110 | 1 |
| G. HARVEST H-2390 | 81.1 | 90.2 | 21.7 | 55.2 | 22110 | 0 |
| TOP FARM SX1104A | 80.6 | . | 24.0 | 56.2 | 22110 | 0 |
| KRUGER K9407 | 80.1 | . | 23.1 | 54.2 | 22110 | 1 |
| CROW'S 414 | 79.7 | . | 21.8 | 52.7 | 22110 | 0 |
| DYNA-GRO 5102 | 79.2 | . | 21.5 | 55.3 | 22110 | 2 |
| CARGILL 3777 | 79.2 | . | 20.8 | 58.4 | 21887 | 1 |
| CARGILL 4327 | 78.8 | 94.7 | 27.1 | 50.2 | 22110 | 0 |
| AGRIGENE AG5480 | 78.2 | . | 25.3 | 53.7 | 22110 | 1 |
| ICI 8692 | 77.3 | . | 21.4 | 58.7 | 22110 | 0 |
| STINE 1033 | 77.3 | . | 21.4 | 53.8 | 22110 | 0 |
| CARGILL 4277 | 75.3 | . | 26.4 | 48.8 | 22110 | 0 |
| KRUGER K9403 | 74.3 | . | 24.0 | 52.8 | 22110 | 0 |
| KRUGER K9402 | 73.9 | . | 21.9 | 53.2 | 22110 | 1 |
| PIONEER 3655 | 73.9 | . | 23.4 | 55.5 | 21105 | 1 |
| EPLEY EX 150 | 73.8 | . | 21.3 | 56.5 | 21998 | 1 |
| KRUGER K9007 | 73.4 | 87.8 | 25.4 | 51.7 | 22110 | 0 |
| CUSTOM FARM CFS W4464 | 73.4 | . | 23.2 | 57.4 | 22110 | 1 |
| CIBA 4303 | 73.2 | . | 23.8 | 54.4 | 22110 | 0 |
| SIGCO 1307 | 73.0 | . | 25.2 | 55.0 | 22110 | 0 |
| CENEX/LOL 434 | 72.6 | . | 20.4 | 53.8 | 22110 | 0 |
| PAYCO 711 | 72.4 | 84.2 | 26.3 | 51.5 | 22110 | 0 |
| JACQUES 5270 | 72.3 | 88.3 | 21.0 | 56.6 | 22110 | 4 |
| KRUGER K9408 | 71.5 | . | 23.5 | 55.4 | 22110 | 0 |
| PIONEER 3563 | 71.2 | 83.6 | 20.5 | 56.6 | 22110 | 0 |
| ASGROW RX510 | 70.6 | . | 24.4 | 50.4 | 22110 | 0 |
| KRUGER K9203 | 70.0 | . | 19.9 | 53.4 | 22110 | 0 |
| CROW'S 445 | 69.8 | . | 26.0 | 50.8 | 22110 | 0 |
| PAYCO 633 | 69.6 | . | 25.0 | 52.7 | 21887 | 0 |
| CIBA 4372 | 69.0 | 85.1 | 26.9 | 49.2 | 22110 | 1 |
| MYCOGEN 5440 | 68.8 | . | 24.8 | 48.9 | 22110 | 0 |
| DAHLGREN D5002 | 68.8 | . | 21.0 | 52.5 | 21552 | 1 |
| ASGROW RX562 | 68.5 | . | 25.4 | 49.0 | 22110 | 0 |
| STINE 1021 | 68.3 | . | 23.6 | 53.6 | 22110 | 0 |
| KRUGER K9310 | 68.1 | . | 25.7 | 52.7 | 22110 | 1 |
| SEXAUER SX540 | 66.2 | . | 20.2 | 52.5 | 22110 | 0 |
| DEKALB DK 485 | 65.8 | . | 21.7 | 51.9 | 21887 | 1 |
| DYNA-GRO 5313IPRO | 65.7 | . | 24.7 | 53.5 | 22110 | 0 |
| SANDS SOI9061 | 65.0 | 82.0 | 27.9 | 48.5 | 22110 | 0 |
| CROW'S 440 | 64.7 | . | 27.9 | 48.4 | 22110 | 0 |
| EPLEY EX 1208 | 63.2 | . | 22.2 | 55.1 | 22110 | 1 |
| TERRA TR600E | 62.2 | . | 27.6 | 46.6 | 21328 | 0 |
| TERRA TR1101 | 61.0 | 74.9 | 30.3 | 46.9 | 22110 | 1 |
| ICI 8704 | 60.1 | . | 21.2 | 53.2 | 22110 | 1 |
| ASGROW RX515 | 59.3 | . | 26.2 | 47.8 | 22110 | 1 |
| KRUGER K9410 | 58.4 | . | 24.6 | 51.9 | 22110 | 0 |
| TERRA TR1090 | 54.2 | 72.8 | 29.4 | 47.5 | 22110 | 1 |
| TEST AVERAGE: | 71.4 | 85.2 | 23.7 | 52.8 | 22046 | 0 |
| TEST LSD (5%) VALUE: | 13.1 | 9.5 | 2.1 | 2.7 | NS* | 1 |
| MINIMUM BEST VALUE: | 70.3 | 85.3 | | 56.1 | | |
| MAXIMUM BEST VALUE: | | | 21.5 | | | 1 |
| TEST C.V.#: | 11.3 | 6.2 | | | | |

*NS - INDICATES HYBRID DIFFERENCES WITHIN A COLUMN ARE NOT SIGNIFICANT.
#COEF. OF VARIATION - A MEASURE OF EXPERIMENTAL ERROR; IF VALUE EXCEEDS
16.0% DATA SHOULD NOT BE USED TO MAKE HYBRID COMPARISONS.

**Table 10. 1993 corn hybrid performance trial results:
Sioux Falls, SD, Tom Wintersteen farm, early maturity (105 days or less).**

| ----- BRAND & HYBRID ----- | YIELDS AT 15.5% MOIST. | | 1993 HARVEST MOIST. (%) | BUSHEL WEIGHT (LB) | FINAL POP. PER ACRE | STALK LODGE (%) |
|----------------------------|---------------------------|------|----------------------------------|--------------------------|------------------------------|-----------------------|
| | 1993 (BU/AC) | 2-YR | | | | |
| ICI 8704 | 133.7 | * | 20.8 | 60.7 | 22780 | 19 |
| ASGROW RX623 | 133.4 | * | 22.0 | 57.2 | 21328 | 16 |
| PAYCO 531 | 132.7 | * | 18.2 | 53.9 | 22668 | 2 |
| PAYCO 633 | 131.2 | * | 19.8 | 56.7 | 22557 | 8 |
| CARGILL 3777 | 130.5 | * | 18.8 | 61.1 | 22780 | 3 |
| ASGROW RX510 | 129.4 | * | 19.7 | 54.4 | 22780 | 19 |
| G. HARVEST H-2390 | 127.0 | * | 20.3 | 56.7 | 22780 | 21 |
| DEKALB DK 462 | 124.8 | * | 19.5 | 55.0 | 22780 | 5 |
| DEKALB DK 485 | 123.5 | * | 18.2 | 55.6 | 22780 | 6 |
| ASGROW RX515 | 123.3 | * | 20.6 | 54.1 | 22780 | 14 |
| ASGROW RX497 | 123.2 | * | 21.5 | 54.4 | 22780 | 24 |
| HORIZON 6575 | 121.2 | * | 20.4 | 58.2 | 22780 | 4 |
| DEKALB DK 493 | 121.1 | * | 17.9 | 59.2 | 22780 | 15 |
| CIBA 4372 | 120.0 | * | 19.9 | 59.9 | 22780 | 12 |
| DEKALB DK 512 | 119.4 | * | 19.1 | 54.0 | 22780 | 14 |
| G. HARVEST H-2404 | 118.7 | * | 20.1 | 56.3 | 22780 | 41 |
| PIONEER 3769 | 118.1 | * | 19.0 | 56.7 | 22780 | 2 |
| CIBA 4273 | 117.4 | * | 19.6 | 57.8 | 22780 | 20 |
| TOP FARM SX1104A | 116.2 | * | 20.7 | 58.0 | 22780 | 22 |
| CUSTOM FARM CFS 5620 | 116.0 | * | 21.5 | 54.3 | 22557 | 14 |
| SIGCO 1200 | 115.9 | * | 19.5 | 55.9 | 22780 | 29 |
| ASGROW RX562 | 114.8 | * | 21.3 | 53.3 | 22557 | 20 |
| PIONEER 3655 | 114.7 | * | 19.9 | 58.0 | 22780 | 35 |
| ICI 8692 | 113.0 | * | 19.8 | 59.6 | 22780 | 22 |
| JACQUES 5270 | 112.6 | * | 19.2 | 59.3 | 22557 | 27 |
| AGRIGENE AG3965 | 112.2 | * | 18.0 | 55.4 | 22780 | 21 |
| SANDS SOI9991 | 112.2 | * | 18.4 | 57.8 | 21775 | 11 |
| CURRY 2129 | 112.0 | * | 19.1 | 58.3 | 22780 | 7 |
| DAIRYLAND ST-1202 | 111.4 | * | 19.7 | 56.4 | 22222 | 6 |
| G. HARVEST H-2407 | 110.4 | * | 20.9 | 56.9 | 22780 | 29 |
| DAIRYLAND ST-1198 | 110.4 | * | 18.5 | 58.9 | 22780 | 5 |
| N. KING N-4242 | 108.9 | * | 17.9 | 55.4 | 22780 | 12 |
| HORIZON 5055 | 108.3 | * | 19.1 | 56.8 | 22780 | 15 |
| SANDS SOI9031 | 107.9 | * | 19.1 | 57.1 | 22110 | 3 |
| MYCOGEN 3440 | 106.5 | * | 18.3 | 56.2 | 22222 | 17 |
| STINE 1042 | 106.3 | * | 20.3 | 57.5 | 22780 | 28 |
| TOP FARM SX1097A | 106.3 | * | 20.5 | 55.7 | 22780 | 17 |
| TOP FARM SX2102 | 104.3 | * | 18.4 | 60.0 | 22780 | 13 |
| CURRY 2111 | 103.5 | * | 18.2 | 54.8 | 22333 | 4 |
| CUSTOM FARM CFS W5559 | 102.5 | * | 21.0 | 54.6 | 22445 | 5 |
| PIONEER 3563 | 100.7 | * | 19.2 | 58.7 | 22780 | 34 |
| CARGILL 3427 | 88.5 | * | 19.8 | 52.0 | 22780 | 34 |
| TEST AVERAGE: | 115.8 | * | 19.6 | 56.7 | 22636 | 16 |
| TEST LSD (5%) VALUE: | 17.3 | * | 1.1 | 4.3 | NS* | 19 |
| MINIMUM BEST VALUE: | 116.5 | * | | 56.9 | | |
| MAXIMUM BEST VALUE: | | * | 18.9 | | | 20 |
| TEST C.V.#: | 9.2 | * | | | | |

*NS - INDICATES HYBRID DIFFERENCES WITHIN A COLUMN ARE NOT SIGNIFICANT.
#COEF. OF VARIATION - A MEASURE OF EXPERIMENTAL ERROR; IF VALUE EXCEEDS
16.0% DATA SHOULD NOT BE USED TO MAKE HYBRID COMPARISONS.

**Table 11. 1993 corn hybrid performance trial results:
Sioux Falls, SD, Tom Wintersteen farm, late maturity (106 days or more).**

| ----- BRAND & HYBRID ----- | YIELDS AT 15.5% MOIST. | | 1993 HARVEST MOIST. (%) | BUSHEL WEIGHT (LB) | FINAL POP. PER ACRE | STALK LODGE (%) |
|----------------------------|---------------------------|------|----------------------------------|--------------------------|------------------------------|-----------------------|
| | 1993 (BU/AC) | 2-YR | | | | |
| CARGILL 4277 | 138.1 | * | 19.8 | 58.1 | 22780 | 7 |
| CENEX/LOL 522 | 135.1 | * | 21.1 | 60.9 | 22780 | 25 |
| SANDS SOI9061 | 134.5 | * | 21.6 | 60.2 | 22557 | 7 |
| PIONEER 3514 | 133.8 | * | 21.0 | 58.9 | 22780 | 8 |
| CARGILL 4327 | 132.6 | * | 21.0 | 56.7 | 22780 | 8 |
| SIGCO 1307 | 132.4 | * | 20.5 | 60.5 | 22445 | 30 |
| DEKALB DK 569 | 131.6 | * | 21.9 | 55.9 | 22557 | 16 |
| DEKALB DK 554 | 129.5 | * | 20.9 | 57.7 | 22780 | 5 |
| PIONEER 3547 | 127.5 | * | 22.2 | 59.5 | 22780 | 14 |
| CARGILL 6337 | 126.7 | * | 23.7 | 58.2 | 22780 | 28 |
| CIBA 4394 | 126.5 | * | 20.1 | 57.8 | 22780 | 9 |
| CUSTOM FARM CFS W6359 | 125.6 | * | 23.8 | 56.0 | 22780 | 4 |
| CUSTOM FARM CFS 6428 | 125.3 | * | 23.4 | 54.5 | 22780 | 10 |
| ASGROW RX653 | 124.6 | * | 21.8 | 59.3 | 22557 | 9 |
| N. KING N-5220 | 124.0 | * | 20.1 | 61.6 | 22780 | 13 |
| CROW'S 494 | 122.5 | * | 24.0 | 55.1 | 22557 | 32 |
| ASGROW RX681 | 122.5 | * | 23.2 | 58.0 | 22780 | 24 |
| CROW'S 440 | 122.3 | * | 22.5 | 58.1 | 22780 | 12 |
| SANDS SOI9081 | 121.6 | * | 23.4 | 56.6 | 22780 | 8 |
| AGRIGENE AG5480 | 121.4 | * | 21.4 | 60.9 | 22780 | 22 |
| TOP FARM SX1107 | 119.5 | * | 20.1 | 60.9 | 22780 | 6 |
| CIBA 4494 | 118.0 | * | 21.6 | 57.4 | 22780 | 26 |
| CENEX/LOL 238 | 116.8 | * | 20.1 | 59.3 | 22557 | 4 |
| N. KING N-6560 | 116.2 | * | 24.0 | 55.9 | 22780 | 27 |
| PAYCO 711 | 115.6 | * | 20.4 | 56.4 | 22780 | 15 |
| STINE 1069 | 110.2 | * | 20.9 | 57.7 | 22780 | 2 |
| CURRY 2154 | 108.4 | * | 19.5 | 59.9 | 22780 | 23 |
| TEST AVERAGE: | 124.5 | * | 21.6 | 58.2 | 22726 | 15 |
| TEST LSD (5%) VALUE: | 14.0 | * | 1.2 | NS* | NS | 20 |
| MINIMUM BEST VALUE: | 124.2 | * | | | | |
| MAXIMUM BEST VALUE: | | * | 20.6 | | | 21 |
| TEST C.V.#: | 6.9 | * | | | | |

*NS - INDICATES HYBRID DIFFERENCES WITHIN A COLUMN ARE NOT SIGNIFICANT.
#COEF. OF VARIATION - A MEASURE OF EXPERIMENTAL ERROR; IF VALUE EXCEEDS
16.0% DATA SHOULD NOT BE USED TO MAKE HYBRID COMPARISONS.

**Table 12. 1993 corn hybrid performance trial results (irrigated, no-till):
Pierre, SD, Dakota Lakes Research Farm, early maturity (100 days or less).**

| ----- BRAND & HYBRID ----- | YIELDS AT 15.5% MOIST. | | 1993 HARVEST MOIST. (%) | BUSHEL WEIGHT (LB) | FINAL POP. PER ACRE | STALK LODGE (%) |
|----------------------------|---------------------------|-------|----------------------------------|--------------------------|------------------------------|-----------------------|
| | 1993 (BU/AC) | 2-YR | | | | |
| DYNA-GRO 5100 | 160.6 | . | 20.0 | 56.9 | 33165 | 27 |
| DEKALB DK 462 | 159.7 | . | 18.7 | 54.1 | 33500 | 1 |
| DAIRYLAND ST-1202 | 159.3 | . | 19.3 | 55.7 | 33053 | 0 |
| ASGROW RX497 | 157.3 | . | 20.5 | 53.7 | 32830 | 3 |
| DAIRYLAND ST-1198 | 156.7 | 94.7 | 19.1 | 55.3 | 33388 | 1 |
| N. KING N-4242 | 156.1 | . | 18.5 | 55.6 | 33500 | 1 |
| G. HARVEST H-2407 | 154.0 | . | 18.0 | 52.7 | 33388 | 3 |
| PAYCO 531 | 153.7 | 102.0 | 19.0 | 56.3 | 33165 | 1 |
| WILSON 1140 | 153.5 | 94.9 | 18.8 | 56.8 | 33500 | 1 |
| HORIZON 5055 | 153.2 | . | 18.9 | 57.4 | 33277 | 0 |
| DEKALB DK 512 | 152.5 | 102.4 | 18.8 | 52.1 | 32830 | 2 |
| CIBA 4273 | 151.8 | . | 19.4 | 57.2 | 32830 | 3 |
| DEKALB DK 493 | 151.8 | . | 18.3 | 54.6 | 33388 | 5 |
| KAYSTAR KX-610 | 150.4 | 97.0 | 19.7 | 56.0 | 32383 | 0 |
| LEGEND LS8102 | 149.6 | . | 21.1 | 57.5 | 33500 | 6 |
| LEGEND LS8301 | 146.8 | 97.7 | 19.3 | 56.0 | 33500 | 1 |
| G. HARVEST H-2322 | 146.6 | . | 18.1 | 55.1 | 33388 | 1 |
| DAHLGREN D5002 | 142.9 | 99.5 | 19.5 | 55.4 | 32830 | 1 |
| LEGEND LS7196 | 137.3 | . | 18.5 | 54.4 | 33277 | 1 |
| CARGILL 3477 | 136.6 | . | 17.5 | 55.1 | 33500 | 1 |
| DAIRYLAND ST-1294 | 130.8 | . | 16.1 | 56.4 | 33388 | 1 |
| CIBA 4183 | 128.2 | . | 17.8 | 56.7 | 33277 | 1 |
| LEGEND LS7395 | 126.7 | . | 17.6 | 57.1 | 32942 | 0 |
| KAYSTAR KX-615 | 125.7 | . | 20.9 | 56.0 | 32607 | 1 |
| LEGEND LS7393 | 125.3 | . | 17.8 | 57.4 | 29815 | 1 |
| CARGILL 3777 | 91.8 | . | 18.3 | 59.4 | 32830 | 0 |
| TEST AVERAGE: | 144.6 | 98.3 | 18.8 | 55.8 | 33040 | 2 |
| TEST LSD (5%) VALUE: | 28.9 | NS* | 1.3 | 2.3 | 1571 | 6 |
| MINIMUM BEST VALUE: | 131.6 | | | 57.2 | | |
| MAXIMUM BEST VALUE: | | | 17.3 | | | 6 |
| TEST C.V. #: | 12.2 | 11.9 | | | | |

*NS - INDICATES HYBRID DIFFERENCES WITHIN A COLUMN ARE NOT SIGNIFICANT.
#COEF. OF VARIATION - A MEASURE OF EXPERIMENTAL ERROR; IF VALUE EXCEEDS
16.0% DATA SHOULD NOT BE USED TO MAKE HYBRID COMPARISONS.

**Table 13. 1993 corn hybrid performance trial results (irrigated, no-till):
Pierre, SD, Dakota Lakes Research Farm, late maturity (101 days or more).**

| ----- BRAND & HYBRID ----- | YIELDS AT 15.5% MOIST. | | 1993 HARVEST MOIST. (%) | BUSHEL WEIGHT (LB) | FINAL POP. PER ACRE | STALK LODGE (%) |
|----------------------------|---------------------------|-------|----------------------------------|--------------------------|------------------------------|-----------------------|
| | 1993 (BU/AC) | 2-YR | | | | |
| CARGILL 7697 | 179.6 | 140.5 | 28.4 | 56.8 | 33500 | 7 |
| CIBA 4372 | 164.4 | 126.6 | 21.1 | 60.3 | 33500 | 8 |
| DEKALB DK 580 | 163.8 | . | 26.5 | 59.4 | 33165 | 3 |
| PIONEER 3514 | 163.8 | . | 24.9 | 58.8 | 32942 | 0 |
| SEXAUER SX678 | 163.6 | . | 25.2 | 59.0 | 31490 | 2 |
| PIONEER 3417 | 163.0 | 121.6 | 25.0 | 57.9 | 32383 | 2 |
| LEGEND LS9112 | 163.0 | . | 27.0 | 59.4 | 33053 | 1 |
| PIONEER 3547 | 162.6 | . | 25.4 | 60.3 | 33165 | 4 |
| G. HARVEST H-2493 | 161.5 | 146.0 | 24.1 | 55.6 | 32942 | 1 |
| HORIZON 6575 | 161.1 | . | 23.5 | 58.5 | 32607 | 1 |
| LEGEND LS8205 | 160.9 | . | 25.6 | 57.2 | 33165 | 1 |
| PIONEER 3357 | 159.0 | 124.8 | 29.4 | 58.7 | 33500 | 9 |
| N. KING N-6560 | 158.9 | 128.0 | 29.5 | 59.0 | 33500 | 3 |
| LEGEND LS8104 | 157.5 | . | 25.5 | 57.9 | 32942 | 6 |
| CIBA 4394 | 156.3 | . | 23.9 | 57.6 | 32607 | 1 |
| DEKALB DK 623 | 156.2 | 124.1 | 26.2 | 57.2 | 32942 | 1 |
| ICI 8501 | 155.6 | . | 26.5 | 55.6 | 33500 | 1 |
| DAHLGREN D5092 | 155.1 | 120.7 | 25.5 | 57.5 | 32942 | 3 |
| PIONEER 3394 | 154.8 | . | 25.1 | 58.7 | 32942 | 3 |
| DEKALB DK 554 | 153.9 | . | 20.1 | 55.6 | 31378 | 3 |
| JACQUES 6970 | 153.5 | . | 22.3 | 56.3 | 32942 | 2 |
| LEGEND LS9310 | 152.5 | . | 25.2 | 53.1 | 31602 | 4 |
| ICI 8543 | 152.0 | 125.9 | 25.8 | 55.7 | 33388 | 5 |
| PAYCO 633 | 151.9 | . | 21.9 | 59.9 | 32495 | 1 |
| PAYCO 814 | 151.7 | . | 27.5 | 58.3 | 33500 | 1 |
| DAIRYLAND ST-1205 | 151.7 | 114.8 | 24.1 | 56.8 | 33053 | 2 |
| SEXAUER SX540 | 151.7 | . | 20.3 | 58.7 | 31825 | 0 |
| CARGILL X4204 | 151.4 | . | 24.2 | 57.4 | 32383 | 3 |
| SIGCO 1307 | 148.8 | . | 23.3 | 58.1 | 32718 | 1 |
| N. KING N-5220 | 148.3 | . | 25.4 | 58.5 | 33053 | 6 |
| G. HARVEST H-2404 | 146.6 | . | 22.8 | 59.3 | 31937 | 18 |
| KAYSTAR KX-667 | 144.2 | . | 24.2 | 58.3 | 32718 | 3 |
| PAYCO 803 | 144.0 | . | 24.3 | 55.4 | 32607 | 1 |
| KAYSTAR KX-655 | 143.7 | . | 23.7 | 58.1 | 31155 | 3 |
| ASGROW RX510 | 141.4 | . | 22.7 | 58.2 | 31825 | 11 |
| MYCOGEN 5440 | 140.9 | . | 22.8 | 55.7 | 32383 | 7 |
| PAYCO 711 | 139.5 | . | 27.9 | 57.3 | 32383 | 3 |
| LEGEND LS8406 | 139.1 | . | 24.3 | 57.3 | 33165 | 2 |
| ASGROW RX515 | 137.8 | . | 27.2 | 57.8 | 32383 | 3 |
| CARGILL 6677 | 137.2 | . | 28.0 | 56.6 | 33165 | 4 |
| DYNA-GRO 5102 | 136.7 | . | 20.5 | 59.2 | 32942 | 6 |
| DYNA-GRO 5313IPRO | 133.3 | . | 24.8 | 59.0 | 33500 | 3 |
| TEST AVERAGE: | 152.7 | 127.3 | 24.8 | 57.8 | 32745 | 4 |
| TEST LSD (5%) VALUE: | 17.7 | NS* | 1.4 | 3.0 | NS | 6 |
| MINIMUM BEST VALUE: | 162.0 | | | 57.4 | | |
| MAXIMUM BEST VALUE: | | | 21.4 | | | 6 |
| TEST C.V.#: | 7.1 | 8.8 | | | | |

*NS - INDICATES HYBRID DIFFERENCES WITHIN A COLUMN ARE NOT SIGNIFICANT.
#COEF. OF VARIATION - A MEASURE OF EXPERIMENTAL ERROR; IF VALUE EXCEEDS
16.0% DATA SHOULD NOT BE USED TO MAKE HYBRID COMPARISONS.

**Table 14. 1993 corn hybrid performance trial results:
Armour, SD, Robert Clark farm, early maturity (110 days or less).**

| ----- BRAND & HYBRID ----- | YIELDS AT 15.5% MOIST. | | 1993 HARVEST MOIST. (%) | BUSHEL WEIGHT (LB) | FINAL POP. PER ACRE | STALK LODGE (%) |
|----------------------------|---------------------------|-------|----------------------------------|--------------------------|------------------------------|-----------------------|
| | 1993 (BU/AC) | 2-YR | | | | |
| DEKALB DK 569 | 172.1 | . | 22.1 | 52.2 | 20100 | 5 |
| ASGROW RX623 | 165.7 | 151.6 | 22.6 | 55.5 | 20100 | 2 |
| CARGILL 4327 | 160.9 | 154.7 | 20.7 | 55.9 | 20100 | 3 |
| PAYCO 711 | 159.2 | 153.6 | 20.2 | 56.4 | 20100 | 6 |
| PIONEER 3514 | 158.8 | . | 21.4 | 55.9 | 19988 | 1 |
| KRUGER K9310 | 157.7 | 150.5 | 22.5 | 55.0 | 20100 | 1 |
| CIBA 4303 | 157.5 | . | 20.8 | 58.7 | 20100 | 3 |
| CARGILL X4204 | 157.3 | . | 22.0 | 56.2 | 20100 | 2 |
| ICI 8704 | 157.0 | . | 21.3 | 56.5 | 20100 | 2 |
| PIONEER 3547 | 156.9 | . | 22.0 | 57.4 | 20100 | 1 |
| DEKALB DK 554 | 156.6 | 145.2 | 19.7 | 53.4 | 20100 | 1 |
| KAYSTAR KX-685 | 156.2 | 149.9 | 20.6 | 56.9 | 20212 | 1 |
| SANDS SOI9061 | 155.7 | . | 20.6 | 56.5 | 20100 | 2 |
| CIBA 4372 | 155.5 | . | 20.0 | 58.0 | 20100 | 2 |
| DEKALB DK 512 | 155.4 | 148.6 | 19.2 | 55.1 | 19988 | 2 |
| SEXAUER SX675 | 155.2 | . | 20.4 | 56.4 | 20100 | 4 |
| ASGROW RX707 | 154.8 | . | 24.7 | 52.0 | 19988 | 2 |
| HORIZON 6575 | 154.7 | . | 20.6 | 55.6 | 20100 | 1 |
| CARGILL 6337 | 154.0 | . | 22.9 | 53.6 | 20100 | 3 |
| CROW'S 375 | 153.3 | . | 19.6 | 58.4 | 20100 | 3 |
| ASGROW RX653 | 151.8 | . | 24.1 | 53.3 | 20100 | 1 |
| DAIRYLAND ST-1208 | 151.2 | . | 21.0 | 56.2 | 20100 | 2 |
| CIBA 4394 | 151.0 | . | 21.0 | 57.8 | 20100 | 1 |
| HOEGEMEYER 2583 | 149.7 | 128.3 | 21.0 | 53.6 | 20100 | 3 |
| N. KING N-6560 | 149.4 | . | 24.1 | 55.6 | 20100 | 4 |
| PIONEER 3417 | 148.1 | . | 21.8 | 55.2 | 20100 | 1 |
| G. HARVEST H-2407 | 148.1 | . | 18.9 | 54.8 | 20100 | 2 |
| CROW'S 440 | 148.0 | . | 21.7 | 55.5 | 20100 | 2 |
| KRUGER K9410 | 147.8 | . | 22.2 | 54.5 | 20100 | 1 |
| N. KING N-5220 | 147.3 | . | 19.8 | 59.4 | 20100 | 1 |
| KRUGER K9408 | 146.8 | . | 20.4 | 58.8 | 20100 | 1 |
| G. HARVEST H-2404 | 145.8 | 139.8 | 20.3 | 58.0 | 20100 | 4 |
| ASGROW RX681 | 145.8 | . | 23.5 | 56.7 | 20100 | 4 |
| HOEGEMEYER 670 | 145.4 | 138.8 | 18.8 | 58.0 | 20100 | 0 |
| TOP FARM SX1107 | 143.1 | . | 21.2 | 55.1 | 20100 | 1 |
| ICI 8692 | 142.3 | . | 19.4 | 58.7 | 20100 | 3 |
| TOP FARM SX1104A | 142.1 | . | 19.4 | 58.3 | 20100 | 2 |
| DAHLGREN D5073 | 141.3 | . | 18.7 | 57.1 | 20100 | 0 |
| HOEGEMEYER 2592 | 139.2 | . | 19.1 | 56.8 | 20100 | 1 |
| DAIRYLAND ST-1207 | 138.9 | . | 19.8 | 58.4 | 20100 | 1 |
| SANDS SOI9031 | 137.1 | . | 17.5 | 57.8 | 20100 | 0 |
| KRUGER K9407 | 134.1 | . | 17.8 | 56.7 | 20100 | 2 |
| WILSON 1140 | 134.0 | 130.1 | 18.0 | 57.2 | 20100 | 0 |
| SEXAUER SX640 | 133.2 | . | 18.5 | 57.0 | 20100 | 2 |
| TOP FARM SX2102 | 127.8 | . | 17.0 | 59.1 | 20100 | 0 |
| TOP FARM SX1097A | 126.0 | 126.5 | 17.9 | 59.0 | 20100 | 1 |
| TEST AVERAGE: | 149.4 | 143.1 | 20.6 | 56.4 | 20095 | 2 |
| TEST LSD (5%) VALUE: | 16.1 | 17.3 | 1.3 | 2.1 | NS* | 3 |
| MINIMUM BEST VALUE: | 156.1 | 137.5 | | 57.4 | | |
| MAXIMUM BEST VALUE: | | | 18.4 | | | 3 |
| TEST C.V.#: | 6.6 | 7.8 | | | | |

*NS - INDICATES HYBRID DIFFERENCES WITHIN A COLUMN ARE NOT SIGNIFICANT.
#COEF. OF VARIATION - A MEASURE OF EXPERIMENTAL ERROR; IF VALUE EXCEEDS
16.0% DATA SHOULD NOT BE USED TO MAKE HYBRID COMPARISONS.

**Table 15. 1993 corn hybrid performance trial results:
Armour, SD, Robert Clark farm, late maturity (111 days or more).**

| ----- BRAND & HYBRID ----- | YIELDS AT 15.5% MOIST. | | 1993 HARVEST MOIST. (%) | BUSHEL WEIGHT (LB) | FINAL POP. PER ACRE | STALK LODGE (%) |
|----------------------------|---------------------------|-------|----------------------------------|--------------------------|------------------------------|-----------------------|
| | 1993 (BU/AC) | 2-YR | | | | |
| DEKALB DK 580 | 168.5 | . | 22.1 | 52.8 | 20100 | 1 |
| KRUGER K9415 | 166.6 | . | 26.8 | 49.3 | 20100 | 2 |
| PIONEER 3398 | 165.6 | 151.0 | 24.9 | 51.8 | 20100 | 1 |
| KRUGER K9314A | 165.0 | . | 26.4 | 52.1 | 20100 | 1 |
| CARGILL 7697 | 164.1 | . | 26.2 | 54.1 | 20100 | 2 |
| SANDS SOI9081 | 162.3 | 142.9 | 24.2 | 54.2 | 20100 | 2 |
| CARGILL 6927 | 161.7 | 149.1 | 23.9 | 53.8 | 20100 | 2 |
| KRUGER K9315B | 161.7 | 148.1 | 25.7 | 51.4 | 20100 | 1 |
| KRUGER K9315A | 160.6 | 148.1 | 26.6 | 51.9 | 20100 | 2 |
| PAYCO 823 | 158.0 | . | 25.3 | 49.6 | 20100 | 1 |
| DAHLGREN D5113 | 157.3 | . | 23.5 | 54.1 | 20100 | 2 |
| WILSON E4353 | 157.2 | . | 24.4 | 50.9 | 20100 | 0 |
| DEKALB DK 646 | 156.6 | 140.3 | 27.0 | 48.1 | 20100 | 3 |
| HOEGEMEYER 2641 | 155.7 | . | 23.8 | 55.3 | 20100 | 1 |
| SANDS SOI9123 | 155.7 | . | 24.8 | 49.9 | 20100 | 2 |
| CROW'S 494 | 155.1 | . | 26.4 | 51.4 | 20100 | 4 |
| HOEGEMEYER 2681 | 153.8 | 144.7 | 27.9 | 51.8 | 20100 | 1 |
| KRUGER K9414A | 153.8 | . | 24.5 | 54.1 | 20100 | 2 |
| KRUGER K9412 | 152.7 | . | 24.8 | 49.5 | 20100 | 0 |
| N. KING N-6484 | 152.4 | . | 25.0 | 50.3 | 20100 | 2 |
| PIONEER 3357 | 152.3 | 145.1 | 24.4 | 53.2 | 20100 | 2 |
| CROW'S 401 | 151.2 | . | 24.7 | 50.8 | 20100 | 0 |
| CIBA 4494 | 148.6 | . | 24.0 | 53.7 | 20100 | 7 |
| WILSON 1540 | 144.6 | 146.5 | 25.2 | 51.2 | 20100 | 4 |
| DEKALB DK 623 | 142.9 | 134.3 | 25.6 | 51.8 | 20100 | 3 |
| WILSON 1432 | 141.1 | . | 21.4 | 54.0 | 20100 | 3 |
| TEST AVERAGE: | 156.3 | 145.0 | 25.0 | 52.0 | 20100 | 2 |
| TEST LSD (5%) VALUE: | 9.8 | NS* | 1.2 | 2.4 | NS | NS |
| MINIMUM BEST VALUE: | 158.8 | | | 53.0 | | |
| MAXIMUM BEST VALUE: | | | 22.5 | | | |
| TEST C.V.#: | 3.8 | 5.3 | | | | |

*NS - INDICATES HYBRID DIFFERENCES WITHIN A COLUMN ARE NOT SIGNIFICANT.
#COEF. OF VARIATION - A MEASURE OF EXPERIMENTAL ERROR; IF VALUE EXCEEDS
16.0% DATA SHOULD NOT BE USED TO MAKE HYBRID COMPARISONS.

**Table 16. 1993 corn hybrid performance trial results:
Beresford, SD, SE Research Farm, early maturity (110 days or less).**

| ----- BRAND & HYBRID ----- | YIELDS AT 15.5% MOIST. | | 1993 HARVEST MOIST. (%) | BUSHEL WEIGHT (LB) | FINAL POP. PER ACRE | STALK LODGE (%) |
|----------------------------|---------------------------|-------|----------------------------------|--------------------------|------------------------------|-----------------------|
| | 1993 (BU/AC) | 2-YR | | | | |
| EPLEY EX 2417 | 139.6 | * | 23.8 | 53.3 | 24120 | 0 |
| MW GENETIC G7460 | 137.6 | * | 24.7 | 55.5 | 23953 | 7 |
| TOP FARM SX1104A | 137.0 | 131.9 | 24.5 | 53.6 | 24120 | 1 |
| SEXAUER SX730 | 135.9 | * | 23.4 | 53.2 | 24120 | 2 |
| G. HARVEST H-2404 | 135.5 | 141.0 | 23.8 | 54.3 | 24120 | 8 |
| CROW'S 375 | 134.8 | * | 24.1 | 54.6 | 24120 | 3 |
| KRUGER K9407 | 134.7 | * | 22.8 | 51.4 | 24120 | 3 |
| DAHLGREN D5073 | 131.7 | * | 23.5 | 52.0 | 23953 | 0 |
| ASGROW RX623 | 131.4 | 149.3 | 24.5 | 50.2 | 24120 | 6 |
| SANDS SOI9061 | 130.6 | * | 24.6 | 52.4 | 24120 | 4 |
| LEGEND LS8301 | 130.5 | * | 21.5 | 54.4 | 24120 | 1 |
| N. KING N-6560 | 129.9 | * | 25.9 | 52.8 | 24120 | 4 |
| WILSON 1140 | 127.9 | 139.2 | 19.8 | 55.9 | 24120 | 2 |
| HORIZON 9110 | 127.7 | * | 27.2 | 49.1 | 24120 | 4 |
| MW GENETIC SX108AA | 127.5 | * | 27.0 | 49.4 | 23618 | 1 |
| SIGCO 1307 | 127.4 | * | 23.8 | 53.3 | 24120 | 5 |
| G. HARVEST H-2407 | 127.1 | * | 21.4 | 52.0 | 24120 | 2 |
| CROW'S 440 | 126.5 | * | 26.0 | 50.9 | 24120 | 2 |
| MYCOGEN 6220 | 126.0 | * | 25.1 | 50.2 | 24120 | 6 |
| ASGROW RX681 | 125.9 | * | 26.0 | 53.3 | 24120 | 6 |
| TOP FARM SX1107 | 125.6 | 148.7 | 22.3 | 54.9 | 24120 | 0 |
| DEKALB DK 569 | 125.3 | * | 24.6 | 50.5 | 24120 | 5 |
| HOEGEMEYER 2592 | 124.7 | * | 24.4 | 51.7 | 23785 | 0 |
| CARGILL X4204 | 124.7 | * | 25.4 | 51.1 | 24455 | 3 |
| SANDS SOI9031 | 124.6 | * | 21.9 | 54.1 | 23785 | 1 |
| DEKALB DK 554 | 124.1 | 139.6 | 24.4 | 50.8 | 24120 | 4 |
| PIONEER 3514 | 123.6 | * | 24.3 | 54.6 | 24120 | 2 |
| ASGROW RX562 | 123.2 | * | 23.1 | 52.2 | 24120 | 5 |
| LEGEND LS8205 | 122.7 | 141.1 | 23.1 | 54.2 | 24120 | 2 |
| SANDS SOI9991 | 122.5 | 137.3 | 19.5 | 55.1 | 23450 | 0 |
| FONTANELLE 4002 | 122.5 | * | 21.7 | 53.4 | 22948 | 2 |
| ASGROW RX707 | 122.2 | * | 26.2 | 49.6 | 23953 | 19 |
| CIBA 4394 | 121.3 | * | 23.8 | 53.4 | 24120 | 4 |
| HORIZON 6575 | 121.3 | * | 22.4 | 53.9 | 24120 | 1 |
| KALTENBERG K5901 | 121.3 | * | 23.8 | 53.3 | 24120 | 1 |
| HOEGEMEYER 2608 | 120.9 | 141.3 | 23.5 | 53.1 | 24120 | 1 |
| AGRIPRO 429 | 120.8 | * | 25.4 | 52.2 | 23953 | 5 |
| DAIRYLAND ST-1207 | 120.8 | 137.2 | 22.8 | 55.2 | 24120 | 3 |
| CARGILL 6337 | 120.7 | * | 26.2 | 51.4 | 23953 | 7 |
| CURRY 2147 | 120.7 | * | 23.2 | 53.5 | 24120 | 1 |
| LEGEND LS8406 | 120.4 | * | 23.5 | 52.5 | 24120 | 4 |
| EPLEY EX 3600 | 120.2 | * | 26.0 | 49.8 | 23953 | 1 |
| DAIRYLAND ST-1208 | 120.2 | * | 24.8 | 52.6 | 24120 | 1 |
| PAYCO 711 | 119.0 | 139.2 | 25.3 | 52.1 | 24120 | 4 |
| PIONEER 3547 | 118.4 | * | 24.8 | 56.3 | 24120 | 11 |
| TERRA TR1020 | 118.3 | * | 21.8 | 55.0 | 24120 | 2 |
| KAYSTAR KX-685 | 118.0 | 146.7 | 23.5 | 53.3 | 24120 | 4 |
| FONTANELLE X0891 | 117.4 | * | 24.0 | 53.5 | 22948 | 2 |
| CURRY 2158 | 117.3 | * | 24.6 | 52.2 | 24120 | 2 |
| CIBA 4372 | 117.1 | 145.3 | 24.4 | 52.9 | 24120 | 1 |

TABLE 16. BERESFORD - EARLY MATURITY TRIAL (CONTINUED).

| ----- BRAND & HYBRID ----- | YIELDS AT 15.5% MOIST. | | 1993 HARVEST MOIST. (%) | BUSHEL WEIGHT (LB) | FINAL POP. PER ACRE | STALK LODGE (%) |
|----------------------------|---------------------------|-------|----------------------------------|--------------------------|------------------------------|-----------------------|
| | 1993 (BU/AC) | 2-YR | | | | |
| HOEGEMEYER 2611 | 117.0 | 138.9 | 24.2 | 53.6 | 24120 | 2 |
| DEKALB DK 512 | 116.7 | 144.8 | 22.7 | 51.0 | 24120 | 4 |
| LEGEND LS8409 | 116.7 | . | 25.6 | 50.2 | 24120 | 0 |
| FONTANELLE 4232 | 116.2 | . | 26.2 | 47.5 | 24120 | 2 |
| N. KING N-5220 | 115.8 | . | 22.3 | 55.1 | 24120 | 0 |
| EPLEY EX 150 | 115.8 | . | 22.7 | 54.4 | 24120 | 5 |
| TERRA TR600E | 115.3 | . | 24.7 | 51.8 | 23618 | 2 |
| MW GENETIC G7665 | 114.6 | . | 25.4 | 48.9 | 23953 | 2 |
| AGRIGENE AG5955 | 114.0 | . | 26.5 | 50.1 | 24120 | 4 |
| KRUGER K9408 | 113.6 | . | 22.9 | 55.1 | 24120 | 10 |
| KRUGER K9308A | 113.3 | . | 24.9 | 51.6 | 23953 | 2 |
| ASGROW RX653 | 112.2 | . | 25.4 | 52.2 | 22445 | 1 |
| CURRY 2154 | 109.8 | . | 22.2 | 53.2 | 24120 | 9 |
| KRUGER K9410 | 108.7 | . | 26.5 | 51.4 | 24288 | 4 |
| JACQUES 6970 | 108.1 | 143.3 | 25.0 | 51.9 | 24120 | 4 |
| SEXAUER SX750 | 105.3 | . | 26.5 | 48.4 | 23953 | 2 |
| FONTANELLE X0515 | 104.1 | . | 23.1 | 53.4 | 24120 | 2 |
| STINE 1069 | 102.2 | . | 24.7 | 51.2 | 24120 | 4 |
| TEST AVERAGE: | 121.8 | 141.5 | 24.1 | 52.5 | 24012 | 3 |
| TEST LSD (5%) VALUE: | NS* | NS | 1.6 | 2.3 | NS | 5 |
| MINIMUM BEST VALUE: | | | | 54.1 | | |
| MAXIMUM BEST VALUE: | | | 21.2 | | | 5 |
| TEST C.V.#: | 8.0 | 7.5 | | | | |

*NS - INDICATES HYBRID DIFFERENCES WITHIN A COLUMN ARE NOT SIGNIFICANT.

#COEF. OF VARIATION - A MEASURE OF EXPERIMENTAL ERROR; IF VALUE EXCEEDS 16.0% DATA SHOULD NOT BE USED TO MAKE HYBRID COMPARISONS.

**Table 17. 1993 corn hybrid performance trial results:
Beresford, SD, SE Research Farm, late maturity (111 days or more).**

| ----- BRAND & HYBRID ----- | YIELDS AT 15.5% MOIST. | | 1993 HARVEST MOIST. (%) | BUSHEL WEIGHT (LB) | FINAL POP. PER ACRE | STALK LODGE (%) |
|----------------------------|---------------------------|-------|----------------------------------|--------------------------|------------------------------|-----------------------|
| | 1993 (BU/AC) | 2-YR | | | | |
| PIONEER 3394 | 132.8 | . | 25.9 | 50.7 | 24120 | 3 |
| CARGILL 7697 | 132.2 | . | 29.0 | 50.6 | 23785 | 6 |
| CARGILL 7997 | 131.8 | 154.0 | 29.7 | 48.9 | 24120 | 5 |
| MW GENETIC G7786 | 131.2 | 143.7 | 27.0 | 52.7 | 24120 | 8 |
| KALTENBERG K7505 | 126.7 | . | 27.2 | 51.5 | 23953 | 9 |
| PAYCO 814 | 126.2 | . | 27.0 | 50.3 | 24120 | 0 |
| HOEGEMEYER 2641 | 125.8 | . | 27.0 | 52.0 | 24120 | 3 |
| SEXAUER SX780 | 124.5 | . | 27.6 | 51.8 | 24120 | 0 |
| KALTENBERG K7209 | 124.4 | . | 26.8 | 49.7 | 24120 | 0 |
| G. HARVEST H-2485 | 122.9 | 146.0 | 25.1 | 52.6 | 24120 | 2 |
| KALTENBERG K7500 | 122.7 | 145.6 | 28.2 | 51.7 | 24120 | 4 |
| SANDS SOI9081 | 120.3 | 145.5 | 27.0 | 49.1 | 24120 | 1 |
| HORIZON 7115 | 120.3 | 135.0 | 28.8 | 49.2 | 22445 | 1 |
| KRUGER K9415 | 119.9 | . | 28.7 | 47.3 | 24120 | 7 |
| HORIZON 7711 | 119.4 | . | 28.9 | 47.1 | 24120 | 4 |
| CURRY 2182 | 119.3 | . | 27.5 | 50.0 | 24120 | 1 |
| LEGEND LS9315 | 119.2 | . | 27.9 | 50.0 | 24120 | 2 |
| CIBA 4450 | 118.6 | . | 28.0 | 49.7 | 24120 | 3 |
| ICI 8543 | 118.3 | 144.6 | 27.3 | 49.2 | 22780 | 4 |
| KRUGER K9314A | 118.0 | . | 28.0 | 48.9 | 24120 | 1 |
| SANDS SOI9123 | 117.5 | . | 27.0 | 47.7 | 24120 | 1 |
| STINE 1116A | 117.2 | . | 29.0 | 48.2 | 24120 | 2 |
| MW GENETIC G8445 | 116.7 | . | 29.3 | 48.9 | 24120 | 3 |
| KALTENBERG K7109 | 116.1 | 142.7 | 27.4 | 48.7 | 23115 | 2 |
| SIOUXLAND SS-9211 | 116.0 | . | 27.6 | 51.8 | 24120 | 4 |
| HOEGEMEYER 2621 | 115.9 | . | 24.8 | 51.9 | 23953 | 3 |
| KRUGER K9412 | 115.5 | . | 27.3 | 48.6 | 24120 | 4 |
| PIONEER 3357 | 115.5 | 145.2 | 28.2 | 50.2 | 24120 | 3 |
| DEKALB DK 646 | 115.5 | 143.7 | 29.8 | 46.8 | 24120 | 1 |
| HORIZON 7878 | 115.4 | 133.1 | 28.6 | 49.4 | 24120 | 6 |
| KRUGER K9311 | 115.3 | . | 27.5 | 49.7 | 23953 | 3 |
| G. HARVEST H-2530 | 114.2 | . | 26.1 | 49.4 | 24120 | 3 |
| N. KING N-6484 | 114.1 | . | 26.6 | 47.7 | 23953 | 1 |
| TERRA TR1101 | 113.8 | 140.8 | 28.4 | 47.5 | 24120 | 3 |
| CROW'S 494 | 113.4 | . | 28.1 | 50.4 | 22110 | 5 |
| LEGEND LS9313 | 112.2 | . | 29.6 | 46.6 | 24120 | 3 |
| WILSON E4353 | 112.1 | . | 26.0 | 48.8 | 24120 | 1 |
| PIONEER 3362 | 111.5 | 143.0 | 27.3 | 48.9 | 22613 | 0 |
| HOEGEMEYER 2628 | 111.4 | 143.2 | 28.6 | 48.6 | 24120 | 3 |
| PAYCO 902 | 111.1 | . | 28.5 | 48.7 | 23283 | 5 |
| TERRA TR1090 | 110.9 | 140.0 | 29.1 | 48.1 | 24120 | 5 |
| KRUGER K9414 | 109.7 | . | 26.9 | 52.1 | 24120 | 6 |
| ICI 8539 | 108.9 | 126.1 | 27.1 | 52.6 | 24120 | 11 |
| DEKALB DK 580 | 108.9 | . | 26.6 | 49.0 | 24120 | 1 |
| TOP FARM SX1114 | 108.9 | . | 28.6 | 48.5 | 24120 | 1 |
| AGRIPRO 605 | 107.7 | . | 29.4 | 48.4 | 24120 | 2 |
| TERRA TR1125 | 107.0 | 135.8 | 28.3 | 50.1 | 24120 | 4 |
| CIBA 4494 | 105.9 | . | 25.8 | 50.8 | 23953 | 10 |
| DEKALB DK 623 | 105.5 | 132.8 | 27.4 | 47.5 | 24120 | 3 |
| KRUGER K9314 | 104.2 | . | 28.7 | 48.8 | 24288 | 12 |

TABLE 17. BERESFORD - LATE MATURITY TRIAL (CONTINUED).

| ----- BRAND & HYBRID ----- | YIELDS AT 15.5% MOIST. | | 1993 HARVEST MOIST. (%) | BUSHEL WEIGHT (LB) | FINAL POP. PER ACRE | STALK LODGE (%) |
|----------------------------|---------------------------|-------|----------------------------------|--------------------------|------------------------------|-----------------------|
| | 1993 (BU/AC) | 2-YR | | | | |
| LEGEND LS9310 | 103.6 | 132.5 | 27.8 | 48.0 | 24120 | 1 |
| SIOUXLAND SS-9109 | 101.5 | . | 27.3 | 49.6 | 24120 | 1 |
| LEGEND LS9112 | 95.2 | 130.1 | 27.9 | 49.9 | 23450 | 1 |
| CROW'S 401 | 93.6 | . | 27.8 | 45.9 | 22445 | 2 |
| DAHLGREN DC-545 | 90.2 | . | 29.9 | 45.6 | 23115 | 2 |
| PAYCO 823 | 89.0 | . | 27.8 | 47.4 | 24120 | 1 |
| KRUGER K9315A | 63.6 | 116.9 | 15.6 | 25.2 | 24120 | 2 |
| KRUGER K9414A | 42.2 | . | 15.7 | 22.6 | 24120 | 1 |
| TEST AVERAGE: | 112.4 | 139.0 | 27.4 | 48.5 | 23901 | 3 |
| TEST LSD (5%) VALUE: | 33.6 | NS* | NS | NS | NS | 6 |
| MINIMUM BEST VALUE: | 99.3 | | | | | |
| MAXIMUM BEST VALUE: | | | | | | 6 |
| TEST C.V.#: | 14.9 | 11.7 | | | | |

*NS - INDICATES HYBRID DIFFERENCES WITHIN A COLUMN ARE NOT SIGNIFICANT.
#COEF. OF VARIATION - A MEASURE OF EXPERIMENTAL ERROR; IF VALUE EXCEEDS
16.0% DATA SHOULD NOT BE USED TO MAKE HYBRID COMPARISONS.

Entries in the 1993 South Dakota corn performance trials.

| COMPANY (BRAND) | HYBRID | COMPANY (BRAND) | HYBRID | COMPANY (BRAND) | HYBRID |
|--------------------|---|---|--|--------------------|--|
| AGRIGENE | AG3500 AG3920 AG5480 AG3965 AG5955 | DAIRYLAND "HEFTY SEED COMPANY" | ST-1198 ST-1205 ST-1207 ST-1294 ST-1195 ST-1202 ST-1208 | KALTENBERG | K7500 K5200 K7109 K5901 K7209 K3909 K4400 K4500 K4800 K4805 K5305 K5600 K7505 |
| AGRIPRO | 194 328 429 605 | DEKALB | DK 485 DK 401 DK 462 DK 554 DK 381 DK 512 DK 623 DK 646 DK 471 DK 493 DK 569 DK 580 | KAYSTAR | KX-685 KX-610 KX-615 KX-655 KX-667 |
| ASGROW | RX497 RX510 RX623 RX653 RX707 RX350 RX433 RX515 RX562 RX681 | DYNA-GRO | 5100 5102 15095 5313IPRO | KRUGER | K9007 K9203 K9402 K9308A K9310 K9315B K9500 K9403 K9407 K9408 K9410 K9311 K9412 K9314 K9414 K9414A K9314A K9415 K9315A |
| CARGILL | 3477 6927 4327 3427 2927 7697 7997 3777 4277 X4204 6337 6677 | EPLEY | EX 1201 EX 1208 EX 150 EX 2417 EX 3600 | LEGEND | LS8102 LS8104 LS9112 LS8205 LS8301 LS9310 LS8406 LS7196 LS7395 LS7393 LS8409 LS7398 LS9313 LS9315 |
| CENEX/LOL | 522 375 424 434 238 | FONTANELLE | 4232 X0891 X0515 4002 | MW GENETICS | G7786 G7460 G7665 SX108AA G8445 |
| CIBA | 4450 4172 4372 4183 4273 4303 4394 4494 | G. HARVEST "JC ROBINSON SEED COMPANY" | H-2404 H-2295 H-2390 H-2485 H-2322 H-2493 H-2292 H-2407 H-2530 | MYCOGEN | 3440 5440 6220 |
| CROW'S | 414 440 401 375 445 494 | G. VALLEY "STENGEL SEED" | GVS282 GVS298 | N. KING | N-6560 N-3808 N-2409 N-2933 N-5220 N-6484 N-4242 |
| CURRY | 2111 2129 2147 2154 2158 2182 | HOEGEMEYER | 2628 670 2583 2608 2611 2681 2621 2641 2592 | | |
| CUSTOM FARM | CFS W3851 CFS W2457 CFS 4227 CFS 3818 CFS W4464 CFS W6359 CFS 6428 CFS W5559 CFS 5620 | HORIZON | 7115 4545 9110 7878 5055 6575 7711 | | |
| DAHLGREN | DC-545 D5002 D5092 D5962 D5073 D5113 | ICI | 8543 8777 8539 8883 8692 8704 8501 | | |
| | | JACQUES | 5170 5270 6970 | | |

ENTRIES (CONTINUED).

| COMPANY (BRAND) | HYBRID | COMPANY (BRAND) | HYBRID | COMPANY (BRAND) | HYBRID |
|--------------------|--------|--------------------|---------|--------------------|---------|
| PAYCO | 402 | SANDS | SOI9061 | STINE | 992 |
| | 531 | | SOI9081 | | 1033 |
| | 711 | | SOI9991 | | 1122X |
| | 413 | | SOI9031 | | 930 |
| | 4421 | | SOI9123 | | 1021 |
| | 633 | | | | 1042 |
| | 803 | SEXAUER | SX450 | | 1069 |
| | 814 | | SX540 | | 1116A |
| | 823 | | SX420 | | |
| | 902 | | SX430 | TERRA | TR1125 |
| | | | SX640 | | TR1020 |
| PIONEER | 3362 | | SX675 | | TR1090 |
| | 3733 | | SX750 | | TR910 |
| | 3417 | | SX780 | | TR1101 |
| | 3563 | | SX678 | | TR600E |
| | 3398 | | SX730 | | |
| | 3357 | | SX510 | TOP FARM | SX1193 |
| | 3861 | | | | SX1097A |
| | 3907 | SIGCO | 1200 | | SX1104A |
| | 3769 | | 1301 | | SX1107 |
| | 3739 | | 1489 | | SX2190 |
| | 3655 | | 1497 | | SX2195 |
| | 3547 | | 1307 | | SX2102 |
| | 3514 | | | | SX1114 |
| | 3394 | SIOUXLAND | SS-9211 | WILSON | 1140 |
| | | | SS-9109 | | 1540 |
| | | | | | 1432 |
| | | | | | E4353 |